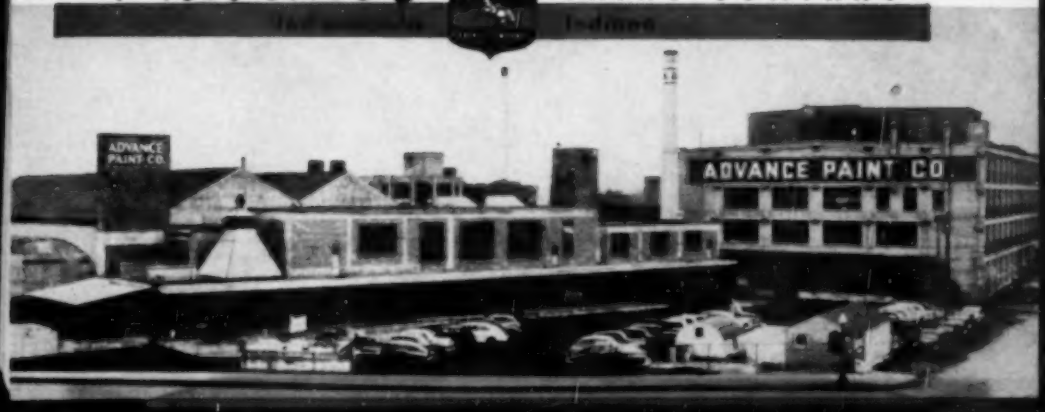
# Industrial FINISHING


For a
Quick Solution
to Your
Finishing Problem,
Write,
Wire, or
Telephone

Advance PAINT COMPANY



**TO GIVE YOUR PRODUCT A GOOD START, GIVE IT AN INTERCHEMICAL FINISH!**

Undercoats . . . Varnishes . . . Lacquers . . .
Enamels for Metal . . . Plastic . . . Wood

Interchemical Finishes

MAIN OFFICE: NEW YORK, N. Y.
FACTORIES: ELIZABETH, CINCINNATI, CHICAGO, LOS ANGELES

AULT & WIBORG, MURPHY, ROXALIN, AND IC ARE TRADEMARKS OF INTERCHEMICAL CORPORATION

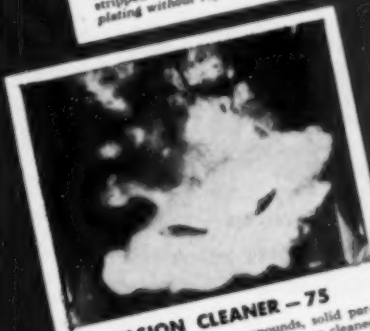
# New Creations

**METAL STRIPPER — A**

An outstanding development for stripping defective electroplated nickel, copper, silver, cadmium and zinc from steel. Fast action . . . no basis metal attack. The highly polished grill cover illustrated has been completely stripped of nickelplate, and is *ready for replating without repolishing.*

**EBONOL BLACKENING PROCESSES**

Ebonol finishes are used to beautify a widely diversified list of superior quality products. Photo shows steel parts blackened with Ebonol-S and S-30, copper and brass with Ebonol-C, zinc with Ebonol-Z. U. S. Patents — 2,364,993, 2,460,896, 2,450,898.



**EMULSION CLEANER — 75**

Oils, greases, buffing compounds, solid particles, deep seated in steel parts are cleaned out and completely removed by this emulsification process. Stubborn, gummy substances on die castings, milling machines, floors, motor blocks emulsify and disperse in water instantly.

**ENAMEL STRIPPERS**

Enthone has over 20 strippers for removing organic finishes — synthetic enamels, lacquers, vinyls, japans. The best strippers, tailor-made for your particular problem, are selected by laboratory technicians after test runs. This service is rendered free of charge.

FREE. Beautiful colored literature, together with step by step instructions for any of these Enthone Products will be sent without obligation upon request.

# Enthone

## HY-VIS-O-LAC

A one-coat finish of dual-coat thickness that requires no special equipment. Any sheen desired.

High cold check resistance.

*One of the*

# 3 SENSATIONAL NEW FINISHES!

Destined to Revolutionize all Previous Concepts of fine furniture finishes for Visible Beauty — Demonstrable Quality and Time- and Labor-Saving Economy of Application.

*Manufacturers!*

If you would like a demonstration of these revolutionary new finishes without obligation, of course, please wire or write to

**GRAND RAPIDS VARNISH CORPORATION**
**GRAND RAPIDS, MICHIGAN**
*Makers of the Famous* Guardsman finishes

Published
the 18th of each month by
**PRACTICAL PUBLICATIONS**
Incorporated
1142 N. Meridian St.
Indianapolis 4, Ind.
Telephone Riley 6771

# Industrial FINISHING

W. H. ROHR, Editor  P. C. BARDIN, Associate Editor

# Contents

Random Comments on the Industrial Scene ..... 4
Automatic Finishing of Air-Way Sanitizors ..... 18
Painting Aluminum Parts for KoolVent Awnings ..... 24
Color Lithography Process for Steel Drums ..... 29
Reconditioning and Refinishing Aluminum Airplane Propellors ..... 33
Finishing Cherry and Maple Furniture on a Conveyor ..... 42
Pearl Lacquer Finishes on Simulated Pearls (Part II) ..... 50
Leather Artistry ..... 67
Letters from Readers ..... 84
Questions and Answers ..... 92
Materials; Supplies; Equipment ..... 102
Editorial ..... 114
Booklets; Circulars; Catalogs ..... 122
"Classified Advertising" Section ..... 126
Advertisers Index ..... 128

**JUNE, 1950**
**Vol. XXVI, No. 8**

ECA

istributed monthly to finishing oom and paint shop foremen, roduction superintendents, hemists, purchasing agents and ompany executives of industrial lants where production cleaning nd finishing are major opera- ons in the manufacture of parts nd products.

★

Subscription Rates Per Year
. S. and Possessions.....$2.00
anada and Foreign Countries .....$4.00

★

resident.....W. H. Rohr
ice-President.....E. A. Dosch
ec.-Treas.....R. E. Suits

★

Eastern Representative
C. A. LARSON
254 West 31st St.
New York 1, N. Y.
Phone: Longacre 4-4285
4-4286

West Coast Representatives
IMPSON-REILLY LTD.
Halliburton Building,
Los Angeles 17, Calif.
Telephone: Dunkirk 8-1179
814 Central Tower
San Francisco 3, Calif.
Telephone: Douglas 2-4994

Wilkinson Equipment & Supply Now Incorporated ..... 28
Apex Chemical to Handle Optimus Cleaning Equip. ..... 28
Wagen, Director of P.P.G. Co. Pacific Coast Division ..... 28
Junior Executives Elected for N.Y.P.V. & L.A. ..... 30
A Mixing Room That's Clean and Safe ..... 31
New Compressor Firm Organized ..... 31
P.P.G. Co. Expands Its Window Glass Production ..... 40
Meyer to Represent Zapon in Iowa, Nebraska, Kansas ..... 48
What Caused Pulled Grain in Finishing ..... 60
Kraft Chemical Now Represents Better F.&C. in Midw. ..... 62
Fostoria Infra-Red Representatives in Western States ..... 82
Platt Represents Ferro Enamel in Eastern Pennsylvania ..... 90
Spruance's New Facilities for Producing NGR Stains ..... 100
Platers' Cleaner ..... 116
E. D. Williams, Sales Manager of The Arco Compa... ..... 118
DeVilbiss Co. to Build New Plant in Somerset, Penna. ..... 119
Mahaffey Joins Schaefer Varnish Co. ..... 124
Collins & Furrow, Service Engineers for Klem Chemical ..... 124
Ferro Enamel Adds I. H. Shroll to Mich. Territory ..... 124
Carragher Sells Vedoc Finishes in Ohio ..... 124
Formica Finish on Wood ..... 126
Glidden's S. S. Award Won by S. C. Cathcart ..... 126
Aviquibo, Foreign Distributor of Glidden ..... 126

*Acceptance under Section 34.64, P. L. & R., authorized*

26 TWENTY-SIXTH YEAR OF PUBLICATION

**Machinery Sales Up.** Cost-conscious manufacturers, up against tightening competition and the need for finding new ways to effect production economies, are buying more machine tools than at any time in the last four years.

Rising costs, and the fact that the consumer wants more for his dollar, have broadened the market for new and more efficient machinery. Orders for such equipment are more than double that of July, 1949, postwar low point of the machine tool industry, and currently are at a rate that may reach $300,000,000 this year, according to William L. Batt, president of SKF Industries, Inc.

* * *

**A New Alloy** said to be stronger and cheaper than brass has been developed. It has all of the electrical characteristics of brass, hence it may be substituted for brass in things electrical. Other uses may be containers, and many forms of hardware.

The new alloy contains zinc, copper and beryllium, and from the symbols of these elements comes its name, "zncube". It is pronounced zin-cue-be.

* * *

**New Door Opener** has been perfected. It is called Pittcomatic; opens and closes a door, or doors weighing as much as 250-lbs., when the door handle is lightly touched.

The unit is a small electric-hydraulic apparatus controlled by a hidden micro-switch, so sensitive that the moment the door handle is touched, the door starts to open. It can be adjusted so that slight continuous pressure on the door handle is required to operate the door, if that is desirable. A 1/3-hp. motor operates the mechanism.

* * *

**Better Lacquer Through Chemistry.** At a recent meeting of the American Chemical Society in Detroit, members were told of a new alcohol with a jaw-breaking ten-syllable name which for ordinary conversation, is referred to as TMC. It has five chemical hooks with which it can connect closely with other compounds, whereas ordinary ethyl alcohol has only one hook. Other alcohols used by paint and lacquer manufacturers have three to four "hooks". Combining TMC, with its additional hook, with rosin should produce an improved lacquer.

* * *

**Furniture Business Good.** Reporting on the first quarter of 1950, The National Furniture Wholesale Association states that wholesale sales are up 15% over the first quarter of 1949. Retail sales during the same period beat last year's sales by 12%.

It was brought out at this meeting, held in Greensboro, N. C., that wholesalers agree the public likes the modern touch in furniture—light tones, elimination of carvings and intricate

*(Continued on page 8)*

# *Dolan's* 35% HI-SOLIDS LACQUER

*. . . sprays right from the drum: requires no thinning or heating. 35% solids in a single application.*

**OUTSTANDING!!**

. . . Because it can be sprayed without the addition of thinners or the necessity of pre-heating to bring down to spraying viscosity, Dolan's 35% Hi-Solids Lacquer gives an improved finish at greatly reduced cost. It is unusually tough, with exceptional cold check resistance. Very light in color. Fits into any finishing schedule. A demonstration will prove convincing.

*"From the start consider the Finish"*

**V. J. DOLAN & COMPANY, Inc.**

*Manufacturers of "Unquestionable Quality"*

INDUSTRIAL FINISHES

1830 N. Laramie Ave. Chicago 39, Ill.

BErkshire 7-0100

# *Symbols* OF INDEPENDENCE

★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★

**Save for your Independence — Buy U. S. Savings Bonds. The Treasury's Independence Drive started May 15 and it will not end until July 4th — Independence Day. You owe it to yourself and your country to support this drive. Buy yourself and encourage others to buy.**

THE *Lilly* COMPANY

FINE USES

High Point, N. C.

A *Symbol*

OF INDEPENDENCE

AND DEPENDABILITY

The Lilly Key assures freedom from unnecessary finishing troubles and you can depend on Lilly's specific finishes for specific products and purposes to produce the right finish, so that "With the Right Finish—You'll Finish Right".

THE Lilly FINISHES VARNISH COMPANY

Indianapolis, Indiana

Gardner, Mass.

HAVING TROUBLE

*with your*

ONE-COAT HAMMER?

*SWITCH TO*

POLYTONE

- There's no fuss, no bother, no mess with Polytone. Sprays easily.
- Excellent adhesion to steel, copper, brass, aluminum, zinc die castings, tinplate, bakelite.
- Bakes to full hardness in 30 minutes at 275 F. or up to 2 minutes at 400 F.

SEA-LAC

Duralac Chemical Corp.

84 LISTER AVE., NEWARK 5, N. J.


detail—but the traditional 18th Century styles are still popular. The ultra-modern tubular type of furniture may prove popular sometime in the future, but right now it frightens many of the average buyers; they buy utility in furniture—something fairly close to what they have been used to living with.

* * *

**Pleasant Odor Printing Inks.** Early efforts in the direction of using perfumed printing inks were disappointing, but these problems have been solved by formulating a fast drying ink that can carry up to 30% of essential oils of pleasant odor.

The use of a technically different vehicle in this new ink retains the odor and yet permits it to remain untrapped in the ink for a very long period of time. The Sigmund Ullman Company's scented inks have excellent printing qualities, do not affect rollers, or cause delay in washing up the press.

The first successful use of this special ink was for the American Museum of Natural History when they printed their magazine with a pine aroma incorporated in the ink. Many other odors suggestive of a product—cedar, bacon, fresh bread, coffee, etc.—are available for the printing of advertising literature. Check with Sigmund Ullman Co. Division of Sun Chemical Corp., 10th St. & 44th Ave., Long Island City 1, N.Y.

* * *

**Boom for Pictures.** Growing use by industry is primarily responsible for an almost fourfold increase in dollar sales of photographic goods in the past ten years. Microfilm, X-rays, training and promotional movies, and aerial photography combine to make industry now the leading outlet for photography. A new market, television, is already substantial, and prom-

*(Continued on page 12)*

## Industry's 3 Newest

# COLD STRIPPERS

## Fast! Economical! Safe! New!

**"UNISOL"**—for removing all baked enamels! Used cold—Non-inflammable—Non toxic—Strips baked enamels in seconds—Used for all type metals—Requires no rinse—Non-injurious to hands or clothing.

**"UNISOL No. 2"**—A new cold stripper for japans and vinyls—Non-inflammable—Strips tough japans and vinyls in matter of minutes—Used for all type metals.

**"STRIPPER 202"**—Something new for removing "stop-off" lacquers in seconds—Will not tarnish highly polished metal surfaces—Non-inflammable—Used cold—Non toxic.

***Samples and further information supplied on request.***

## CHEMCO PRODUCTS CO., Inc.

7740 WEST 47TH STREET LYONS, ILLINOIS

## Positive action of BARRETT TYPHOON CENTRIFUGAL WASHERS provides for quick, thorough parts cleansing

In these efficient centrifugal machines the washing solution enters the top of the whirling load under valve control. The operating principle—being that of a typhoon—gives the washing solution a spraying, swirling, and surging action which thoroughly permeates the contents. During this action, centrifugal force creates hydrostatic pressure within the work container. That proportion of the deluge going to the bottom is forced up the side and out carrying off the contaminated fluid.

A thorough, quick cleaning is definitely assured by flowing sequence. Two or more liquids may follow, making it possible to wash, rinse or provide any further treatment as required.

Several Barrett installations involve the use of four machines operated by one man who loads and unloads in three minute cycles. Washing time is only one minute. Another type of set-up provides for recovering oil, washing, drying, and coating with rust-proofing material.

As in all Barrett Centrifugal machines, provision is made for convenience and safety of operation.

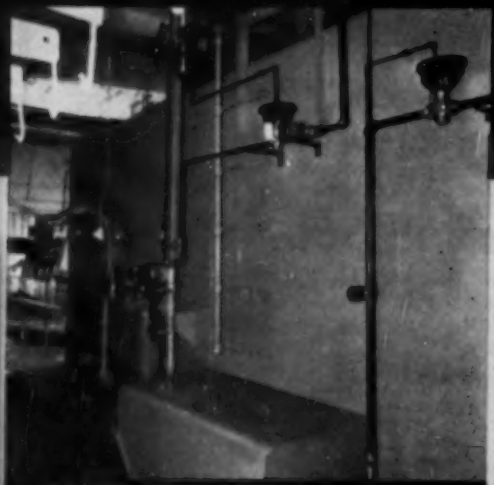
***Send at once for details of Barrett Typhoon Washer***

## THE LEON J. BARRETT COMPANY

*Designers and Builders of Centrifugal Machinery*

1703 GRAFTON ROAD WORCESTER 1, MASS.

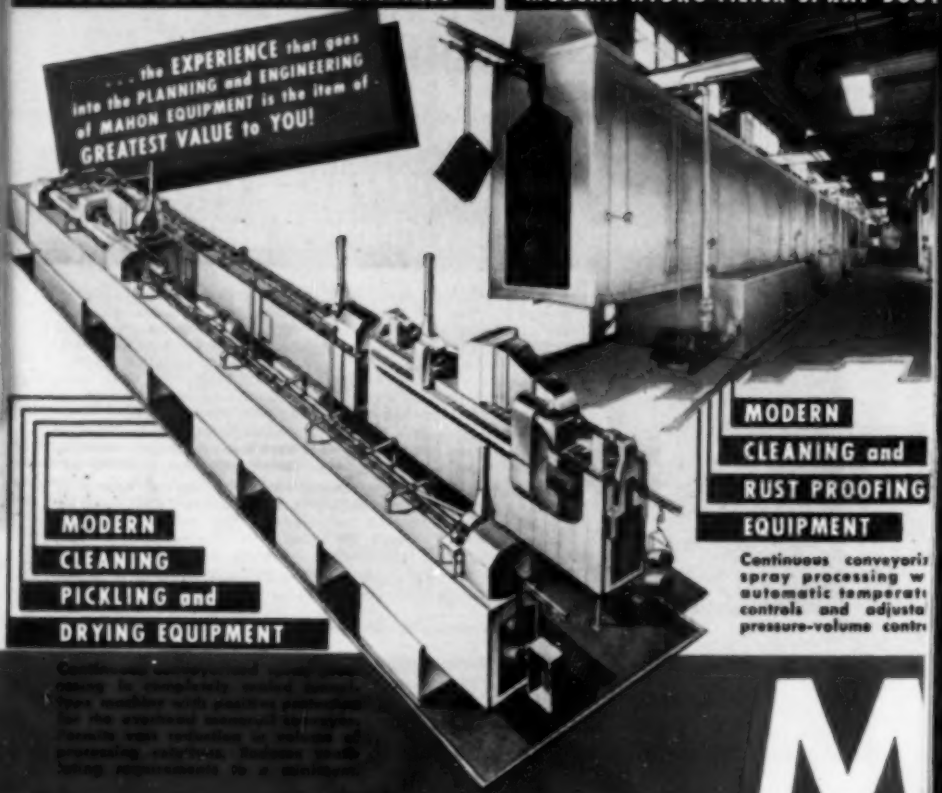
# COMPLE



MODERN FLOW COATING MACHINES

MODERN HYDRO-FILTER SPRAY BOOT

. . . the EXPERIENCE that goes into the PLANNING and ENGINEERING of MAHON EQUIPMENT is the item of GREATEST VALUE to YOU!



MODERN CLEANING and RUST PROOFING EQUIPMENT

Continuous conveyoriz spray processing w automatic temperat controls and adjusta pressure-volume contr

MODERN CLEANING PICKLING and DRYING EQUIPMENT

M

# Finishing SYSTEMS

. . . for ENAMELS • LACQUER • PAINT • VARNISH

MAHON SELF-HOUSED FINISHING SYSTEMS installed on roof or adjacent to plant

## *Modern Equipment Reduces Finishing Costs . . . Provides Better Working Conditions . . . Produces Finer, More Durable Finish!*

Modern technique in the processing of metal surfaces and the application of modern finishes requires modern equipment with positive control of each operation. Mahon Self-Housed Finishing Systems permit the freedom in planning essential to highly efficient equipment of this type. All restrictions imposed by plant layout are eliminated . . . hence, no compromises are engineered into these finishing systems . . . proper coordination and precise control of each phase of the finishing process is assured. No matter what your product may be, the Mahon organization is prepared to produce a complete finishing system that will save you money, provide better working conditions, and improve the quality of the finish on your product. If you are contemplating new equipment, remember that the Mahon organization has pioneered development of this highly specialized field for over thirty years . . . broad experience in every industry where finishing constitutes a major production operation, plus constant research and experimentation, has endowed Mahon engineers with a wealth of technical knowledge and practical know-how not available to you elsewhere. See Mahon's Insert in Sweet's Mechanical Industries File, or write for Catalog A-649.

**THE R. C. MAHON COMPANY**

HOME OFFICE and PLANT, Detroit 11, Mich. • WESTERN SALES DIVISION, Chicago 4, Ill.

Engineers and Manufacturers of Complete Finishing Systems—including Pickling Equipment, Metal Cleaning and Rust Proofing Equipment, Dry-Off Ovens, Hydro-Filter Spray Booths, Filtered Air Supply Systems, and Drying and Baking Ovens. Also Core Ovens, Hydro-Foam Dust Collectors, and many other Units of Special Production Equipment.

# MAHON

**NEW!**

**DIFFERENT!!**

**BETTER!!!**

ALLIED'S Electro Cold Stripper is not "just another" paint remover but has been formulated along radically different lines to do an outstanding job on the production line.

Removes paints, lacquers, enamels, synthetics and wrinkles while you watch. The finish actually "pops off." Especially effective on hard-to-remove baked-type finishes. It is made to handle really tough jobs.

NON-INFLAMMABLE. Non-injurious to hands or metal in time required for removal of paint film.

Simply dip, shake well and dry. Then wash with pressure stream of water or wipe well with rag and refinish immediately. Leaves no "after film."

Many industrial users tell us this is the best Stripper they have ever used. Perhaps it will help you solve YOUR problems, too!

*Write for sample and quotations—or order 5 gallons at drum price.*

**ALLIED FINISHING SPECIALTIES CO.**

2641 W. Grand Ave., Chicago 12


ises to be the fastest growing consumer of film for the next several years. While industrial uses are not growing as fast as television, they are increasing steadily. Use of X-rays for routine inspection of metal products became highly developed during the war. Free chest X-rays also provide a substantial market for film. Publicity, training films and time-and-motion studies are now important industrial uses of film.

* * *

**New Industrial Profession.** According to William J. Kelly, president of the Machinery & Allied Products Institute, opportunity is knocking at the door of young men trained in technology, economics and accounting —to become industrial replacement engineers. A properly trained man who can determine by scientific principles when a piece of equipment is economically dead, and show actual figures to prove his point, is what industry needs. Up to now most plants operate equipment until the cost of dead time due to repairs, and the cost of repairs "becomes too great", relatively, not factually speaking.

Production systems are carefully engineered, studied and revised before being put into effect; why not replacements too?

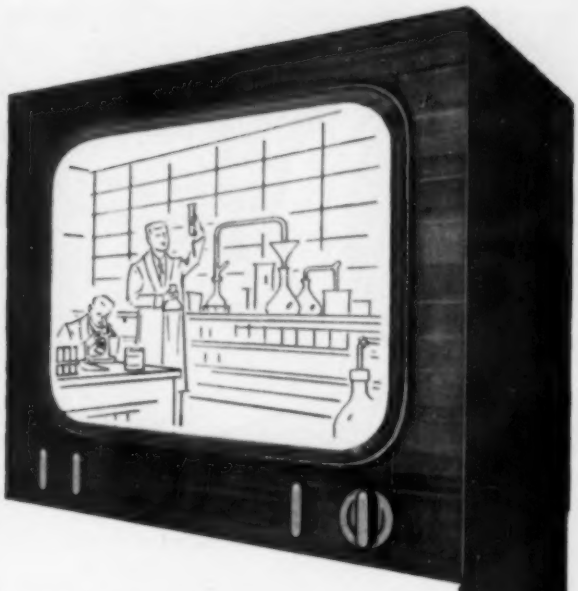
* * *

**Rain Makers.** Scientific weather recording instruments to equip four meteorological stations are being loaned to directors of New York's artificial rain-making project by the Friez Instrument Division of Bendix Aviation Corporation, at Baltimore, Md.

The rain-making experiments, started in March in hopes of relieving the city's critical water shortage, represent the first systematic attempt to utilize "triggered" clouds as a source of water, and may be of tremendous

*(Continued on page 119)*

# AS MODERN AS TELEVISION



Gilbert Spruance finishes are kept as modern as television itself — through constant researching, testing and experimentation—in our modern, fully equipped laboratory.

If you have a television set the chances are that the cabinet was finished with Gilbert Spruance stains — fillers — undercoats and lacquers noted for quality, beauty and durability.

If there's a wood finish you wish you had — dreamed about — or just imagined — if there's one you want improved — changed or developed — we invite you to avail yourself of our experience and willingness to work on it for you.

## THE GILBERT SPRUANCE COMPANY

PHILADELPHIA 34, PA. • WINSTON-SALEM, N. C.

## Compounded Especially for the Metal Decorator

A new series of **GOLD LACQUERS** for coating of cans, crowns, caps and closures and other specialized uses has been developed particularly for Metal Decorators by the Watson-Standard laboratories.

They are primarily based on oleo-resinous resins, alkyd resins, vinyl resins and other special gold lacquer vehicles. A wide variety of types are available depending on the end use.

Complete information will be sent without obligation. Let us help you with your coating problems. Write us today.

**THE WATSON-STANDARD CO.**
225 Galveston Ave. Pittsburgh 30, Pa.

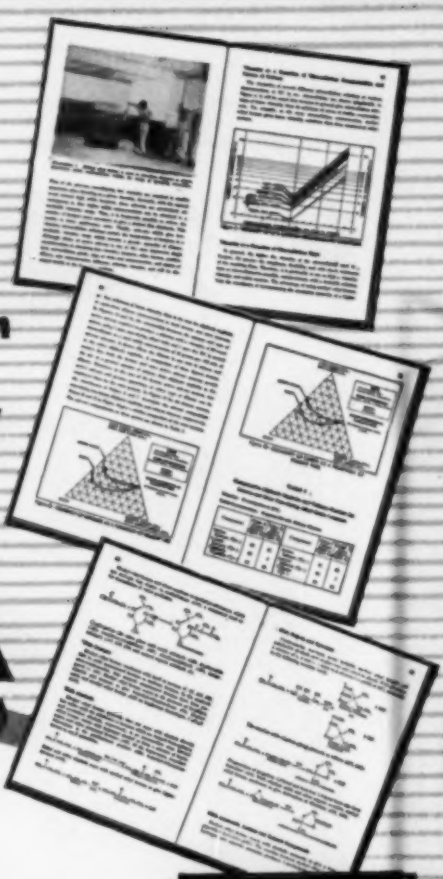
From SHELL CHEMICAL

# NEW!

## Important technical book on

# MEK

## (methyl ethyl ketone)



## . . . a comprehensive review of its characteristics and commercial uses

Since 1931 when Shell Chemical pioneered in the commercial manufacture of MEK, this solvent has become increasingly important to industrial chemical products and processes.

This review of Shell's experience to date with the properties and applications of MEK contains many references to existing literature.

Of particular interest to surface coating manufacturers are the charts and data relating to the use of MEK in lacquers and other finishes.

**A copy of the new book** on MEK (37 charts, clothbound, 129 pages) will be mailed upon receipt of your letterhead request. Product samples are available for your evaluation.
Write Department F

# SHELL CHEMICAL CORPORATION

**CHEMICAL PARTNER OF INDUSTRY AND AGRICULTURE**

astern Division: 500 Fifth Avenue, New York 18 • Western Division: 100 Bush Street, San Francisco 6
s Angeles • Houston • St. Louis • Chicago • Cleveland • Boston • Detroit • Newark

# Engineered from start to...

# "FINISH" by Kirker

The "Homease" oil furnace unit by Bogue Electric Co of Paterson, N. J., does its job efficiently—and *looks* good while doing it!

At home in even the most lavish basement game room, the silver gray KIRTEX (hammered texture enamel) sprayed over a zinc chromate primer hides surface blemishes in the metal and gives a rich "custom" appearance.

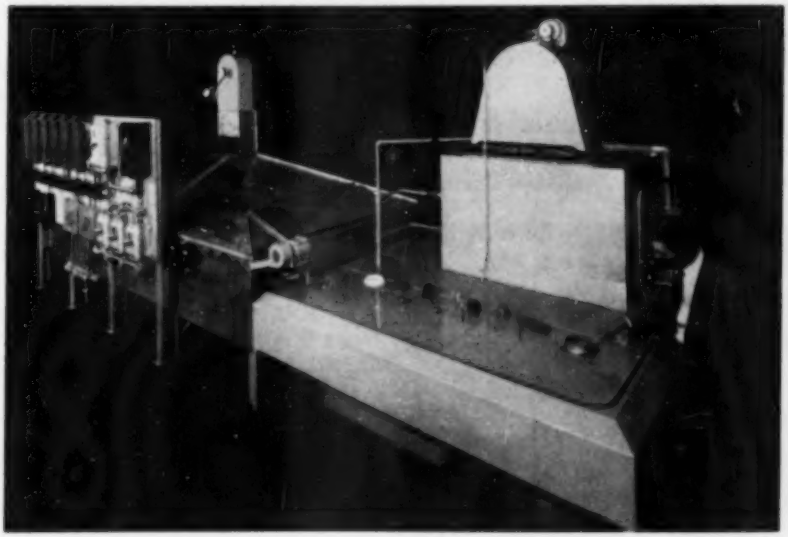
Follow-through on basic unit quality, with a fine Kirker exterior finish, has proved an effective sales stimulator for Bogue. Let Kirker recommend such a finish for your product—no obligation.

KIRCO Kirker CHEMICAL COMPANY

ONE EAST ELEVENTH STREET • PATERSON 4, NEW JERSEY

# REDUCE FINISHING COSTS

By using CAPITOL ELECTRIC SPRAY BAKE EQUIPMENT for high quality, fast production of parts up to 10-in. diameter with regular or irregular shapes. Prominent manufacturers of clocks, automotive parts, hardware, compacts, pens, pencils, lipsticks, etc., are among the many satisfied users of Capitol Machines, Models B, C and D, one of which is shown below.



Shown on working bed of machine are: CLOCK CASING, PENCILS, TOY TRAIN, MOTOR HOUSING, DIAL RING, and DOOR KNOBS—a few of many items which can be spray-bake finished.

***Here's How:*** Speedy production—Over 200 pieces per minute. Small space required—as little as 6′ x 18′. Quick change adjustments—only 10 minutes! Machine cost recovered in few months by actual case histories. Absolutely uniform quality controls.

***Ask Now For:*** Details on these and other exclusive features. Or better still, bring in or send in your own work samples for test run and estimate. No obligation.

**WRITE**

## The CAPITOL MACHINE COMPANY

**DANBURY, CONNECTICUT**

**Tel. Danbury 3-2758**

# Automatic Finishing of

How die-cast and sheet metal parts for vacuum cleaners are cleaned, spray painted with hammered effect finish, and baked in a conveyorized setup.

**By F. H. Burmeister**
*Works Manager of the Air-Way Electric Appliance Corp.*

INCREASE the constants and decrease the variables, and you obtain uniformity—or you approach it very closely. That is exactly what we have done in applying a hammered finish on vacuum cleaner shells and bases.

Why is uniformity so important? The shell and the base for individual machines are not assembled before finishing. Each part is coated separately and, due to our method of operation, they may not be coated the same day; but when the two are assembled, the pattern must be uniform.

Remember when hammered finishes were applied in two separate operations? The background color was sprayed; then a spatter of thinner (or some similar operation) formed the hammered effect. After some experimenting and practice an experienced operator could produce a reasonable degree of pattern uniformity by this method. But let him be away from his spray booth for 15 or 20 minutes, or absent from work for a day or so; and another operator, taking his place, would produce an entirely different hammered pattern. The substitute operator might be just as good a spray man, but every man's rhythm, motions and methods are slightly different, and this slight difference is enough to spoil the uniformity of a pattern.

It was because of these variations in manual operation that we mechanized the spraying of our new hammered-effect finish. We made it

[PAGE 18]

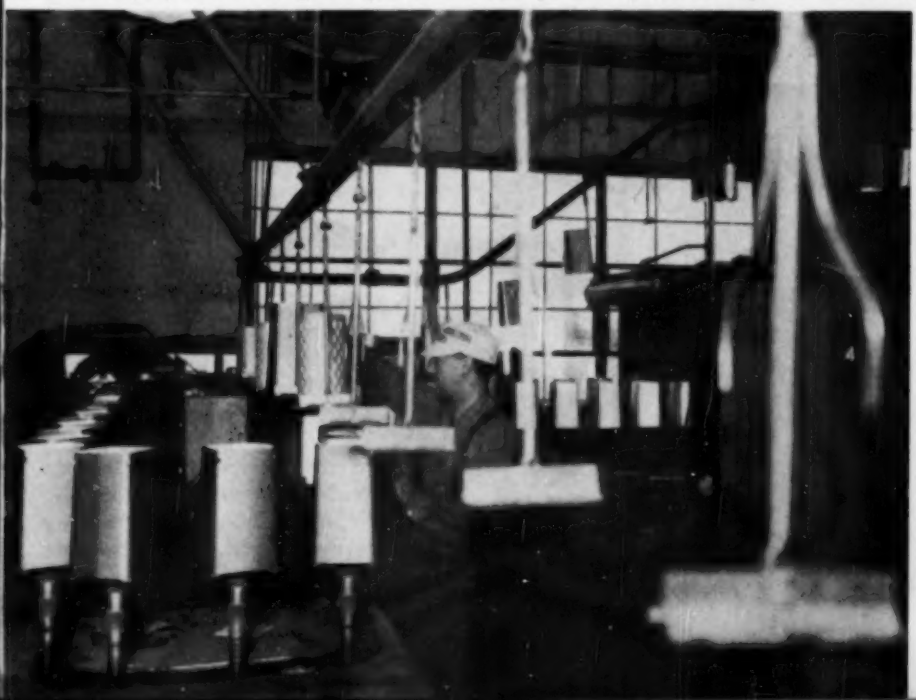
# Air-Way Sanitizors . . .

automatic, which removed the first variable. To remove other variables, we carefully watch and control the viscosity of the material, the atomizing and fluid pressures of both the material and the thinner that forms the hammered pattern, the baking time and the oven temperature. Finally, with the speed of our conveyors constant, and the fact that we buy all of our material and thinner from the same source and according to a definite formulation, we feel assured that we will have uniformity of pattern regardless of when any part is finished.

Referring to the equipment, first we have an overhead monorail conveyor which starts in the fabricating department, travels through the finishing room and on to the assembly lines and finished parts stockroom. This conveyor operates through a variable-speed drive at 18-ft. per minute; it has hangers spaced on 24-in. centers.

In the finishing room, the conveyor passes directly over part of the automatic spraying setup. At a convenient station an operator removes an item from the overhead conveyor and places it on the horizontal spindle conveyor of the automatic spraying machine where it is

Automatic spraying, infra-red baking and overhead conveyor setup. Infra-red oven appears at left; spray booth at right. Operator transfers parts from one conveyor to the other.

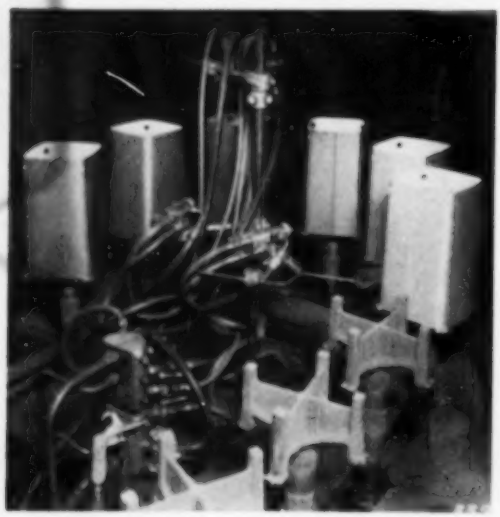


sprayed as it rotates and travels past the spray guns. The spray-painted parts travel through an infra-red oven and are removed at the same station where they were put on the conveyor. They are put back on the overhead conveyor which carries them either to the assembly line or to the finished parts room.

The overhead conveyor does double duty in that it brings parts from the fabrication department, carries them through surface cleaning and, after they have been painted and baked, it carries them to the assembly line or stock room.

In the Air-Way Sanitizor there are two parts to be finished—the aluminum die-cast base and the outer tank shell which is made of sheet aluminum. These parts are loaded on the conveyor in the fabricating department. They are carried through a trichlorethylene vapor degreaser where oil and grease are removed. They continue on this conveyor to the automatic spray machine.

Close-up of automatic spray guns in spray booth. Parts are sprayed with a uniformly matched hammered-effect finish when they rotate and travel past the automatic guns.



### Spraying Machine Features of Automatic

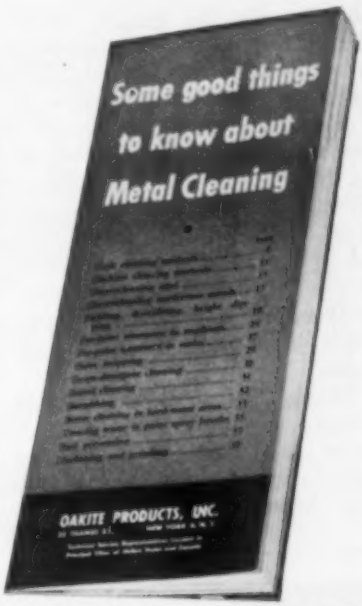
The automatic spray machine is a right angle affair with horizontal chain conveyor and vertical spindles which support work holders. The vertical spindles have brass work holders which support either bases or tank shells. Brass is used to reduce the possibility of a spark which might cause a fire. The spray painting conveyor operates through a variable-speed drive at 5-ft. per minute. The conveyor spindles, which support work in process, are mechanically rotated at 65-rpm. along entire spraying range. The machine has four fixed spray guns.

### Details of Spraying Procedure

Because of the difference in their size and shape, the base and outer shell are not run alternately on the conveyor. We arrange to run one kind of parts for several hours; then we change over to the other kind of parts and run them for several hours. Work holders, mounted on the spindles of the automatic spray machine, do not need to be changed as they are made to support both base parts and outer shells.

Bases are transferred to the spindle conveyor to pass through the spray booth. Four fixed spray guns are used on these parts—two for lacquer enamel and two for

# Which of your metal-cleaning jobs would you like to improve?




Listed below are some of the operations discussed in Oakite's new 44-page illustrated booklet on Metal Cleaning. Please check the list. Then let us show you how Oakite materials and methods can give you better production with greater economy.

OAKITE PRODUCTS, INC., 32F Thames St., New York 6, N. Y.

*Tell me (without obligation on my part) about Oakite methods and materials for the following jobs:*

- ☐ Tank cleaning
- ☐ Machine cleaning
- ☐ Electrocleaning
- ☐ Pickling
- ☐ Pre-paint treatment
- ☐ Paint stripping
- ☐ Steam-detergent cleaning
- ☐ Barrel cleaning
- ☐ Burnishing
- ☐ Rust prevention
- ☐ Send me a FREE copy of your booklet "Some good things to know about Metal Cleaning"

NAME.....

COMPANY.....

ADDRESS.....

*Technical Service Representatives in Principal Cities of U. S. & Canada*

**OAKITE** SPECIALIZED INDUSTRIAL CLEANING MATERIALS • METHODS • SERVICE

thinner for the spatter coat. One 2-gun set sprays the side of the base, while the other 2-gun set sprays the top of the base.

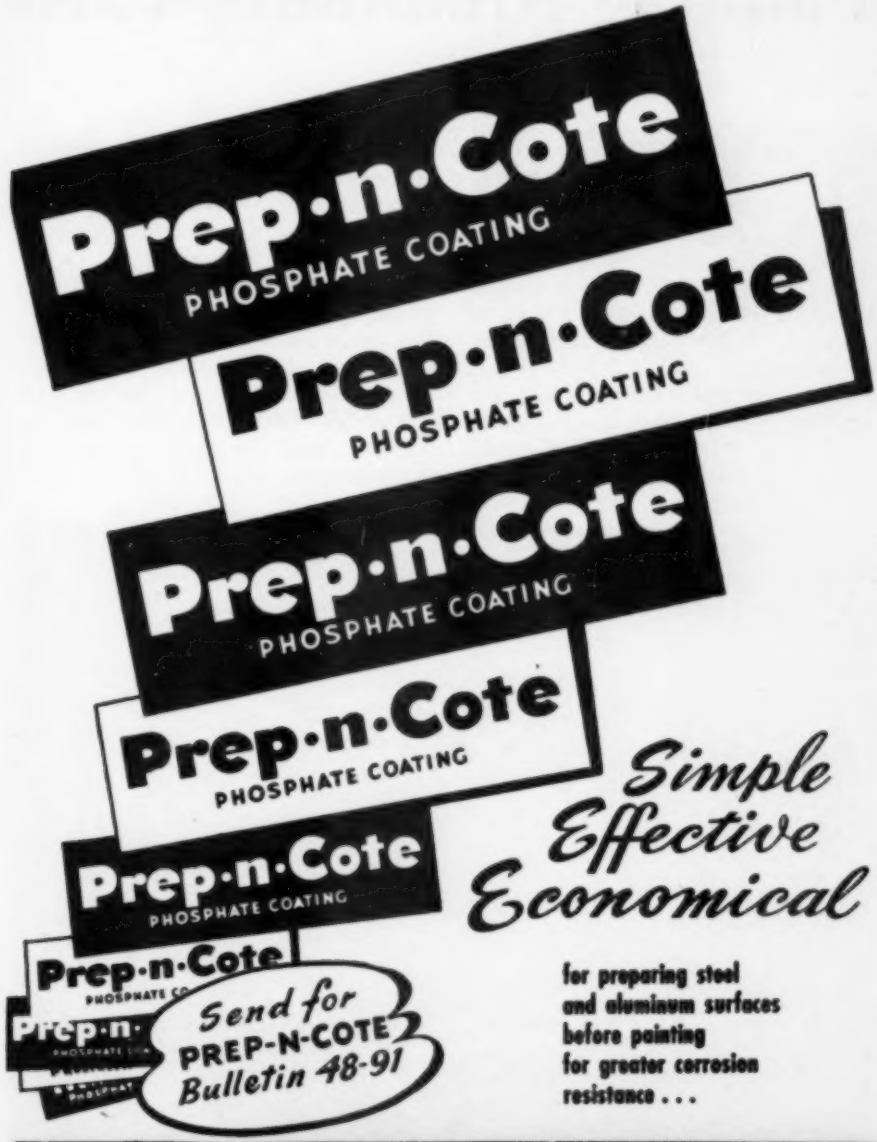
For base castings we use a lacquer enamel of 36 seconds viscosity at 75° F. (as measured in a No. 4 Ford cup) with an atomizing pressure of 60-lbs. and fluid pressure of 11-lbs. On the spatter guns we use a special tip and an internal mix nozzle with an atomizing pressure of 3½-lbs. and fluid pressure of 3-lbs.

Outer shells follow the same procedure, except that only two spray guns are necessary—one for lacquer enamel and one for thinner. On these parts we use a lacquer enamel of 33 seconds viscosity at 75° F., as measured in a No. 4 Ford cup. The atomizing pressure is 70-lbs. and fluid pressure is 22-lbs.

### Finish Is Force Dried in Infra-Red Oven

All parts pass through the infra-red oven (part of the automatic spray setup) where the finish is force dried for four minutes at 150° F. As parts leave the oven they travel around to where they started; here they are transferred to the overhead conveyor to be taken to an assembly line or stock room. With the conveyor speeds now used, we obtain a 12-minute finishing cycle.

In this conveyorized water-wash booth, metal parts for portable steam-cleaning equipment are sprayed wih a moderately heavy coat of heated alkali-resistant paint. The conveyor carries all spray-painted parts into and through an oven where the paint coating is baked.




**NEILSON CHEMICAL CO.**

2682 Tecumseh Rd.
Windsor, Ont.

**6562 Benson St., Detroit 7, Mich.**

3411 Union Pacific Ave.
Los Angeles 23, Calif.

# Painting Aluminum Parts

HALF A DOZEN men, utilizing efficient handling methods and a compact cleaning, painting and baking setup, operate the finishing department at the Etna plant (greater Pittsburgh) of KoolVent Metal Awning Corp. of America. Their job entails finishing approximately 1,000,000-sq. ft of aluminum pieces annually. This includes cleaning and special metal treatment, a one-coat application of enamel and infra-red baking.

The Pittsburgh establishment is but one of the 45 plants operated under this trade name in 35 states and Hawaii, and in two Canadian provinces.

KoolVent awnings are now in evidence on dwellings and commercial buildings across the country. Naturally, durable brilliant finishes on its aluminum awnings, featuring a variety of colors, has played an important part in their popularity. Each awning installation is a cus-

Aluminum parts are dipped into cleaning, surface-conditioning and rinsing tanks with a large stainless steel basket which is lowered, lifted and moved from tank to tank by a traveling electric hoist, above. Here workmen wearing rubber gloves are removing aluminum parts from the last rinse tank and placing them in vertical position in portable racks.

# For KoolVent Awnings

**Production cleaning, surface treating, drying, spray painting, and baking of aluminum strips for assembly into new KoolVent awnings for windows and doors.**

**By Walter Rudolph**

tom-made job. Awnings are assembled permanently at the point of installation.

### Parts Racked and Tagged For Each Order

With each job requiring individual specifications, it follows that the parts that go into a complete awning must be bunched and handled as a separate group through fabrication and finishing. This grouping is handled neatly and efficiently at KoolVent through the use of special storage racks and careful tagging of parts.

A foreman inspects each group of pieces as it leaves a fabricating line, and stores it in one of the racks between the fabrication area and the paint department. Each of these racks is mounted on heavy-duty ball-bearing casters for easy movement about the area. Each rack has ten compartments (five on each side) bounded, except in front, by expanded metal that is spot welded for sturdiness. Rack framing is made of angle iron, also welded, with overall measurments of 35x80x114-in.

Close-up of portable partitioned rack into which aluminum parts for awnings are placed on end. They are separated as to color and for individual orders. A chain across the front prevents them from falling out when the rack is moved from one area to another.

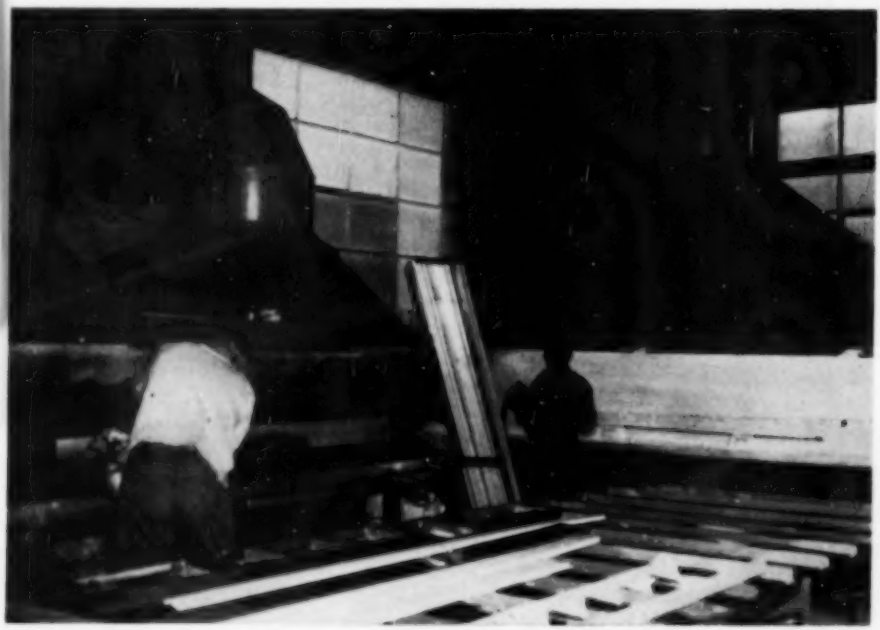
After jobs are placed in the rack compartments, a small chain fastens across the front to prevent pieces from falling during movement.

Two men who operate the cleaning and metal treatment setup, move a loaded rack of awning parts, as needed, to the first of five tanks

along one side of the building. Each tank is 3x4x16-ft. The first and third tanks are heated by gas, thermostatically controlled. A large wide-mesh basket made of stainless steel, is used to carry pieces from one tank to another. This basket is lifted, moved and lowered by a small electric lift traveling under an overhead monorail which is centered over the tanks. One basket suffices for the tanks, as immersion in each tank is only for a few minutes. The clean treated pieces are finally racked again and the basket is moved back to the first tank for loading.

As workers load the basket from one of the mobile racks, they check the fiber tags on each group of pieces, and inspect the parts for defects, as a high quality surface condition must be maintained for the one-coat finishing job. The first tank holds an alkaline cleaning solution which is held at about 180° F. The second tank contains an agitated water rinse. The third immersion is into a solution which is important for corrosion-proofing and an aid to paint adhesion. It is heated to slightly over 100° F. The fourth tank is another clear rinse. Finally, the basket lowers pieces into an acidulated (chromic acid) water rinse—another aid to the all-important corrosion-proofing.

Following the last rinse, workers wearing heavy rubber gloves remove the treated parts. Groups and tags are checked carefully, and the jobs are again loaded into a mobile



Two spray booths and cross-slat conveyor which carries painted parts to and through oven.

• No matter what cleaning system you are now using, it will pay you to "get the facts" about MINIT-KOTE—the *one-stage washer* cleaning system that is cutting metal finishing costs, to the rock bottom, for many of the nation's largest manufacturers of quality metal products.

MINIT-KOTE removes the risk from metal finishing. It provides faster, more thorough cleaning and at the same time protects by forming a light, but uniform phosphate coating on the cleaned surface for better, longer lasting paint adherence —all in one simple, cost cutting operation.

Every man doing metal finishing should know the MINIT-KOTE *cost cutting story*. Bulletin gives all the information—it's yours, free for the asking.

***GET THE FACTS . . . WRITE FOR BULLETIN TODAY.***

**KLEM** *Chemicals Inc.*

OFFICES IN PRINCIPAL CITIES

**14373 LANSON • DEARBORN, MICHIGAN**

rack. Ordinarily a period of air drying is allowed before painting, but if weather conditions are such as to retard the normal speed of drying, or if some particular jobs are urgently needed for quick shipment, the rack is pushed into a specially constructed force-drying chamber into which warm filtered air is blown by a small blower.

### Spray Painting and Infra-red Baking

Special equipment was fabricated and installed for the spray painting and infra-red baking operations, too. The spray painters place the coated strips on a cross-slat apron-type conveyor which carries them into and through an infra-red baking oven. Baking requires only a few minutes at a temperature of 352° F.

After traveling beyond the oven for several feet, to allow the pieces to cool after baking, the completed parts are removed from the conveyor and put on wrapping benches preparatory to shipping. For local orders, the pieces for awnings are routed to sub-assembly tables.

## Wilkinson Equipment & Supply Now Incorporated

Since its incorporation April 3, 1950, the name is now Wilkinson Equipment & Supply Corporation, where formerly the firm used the name "Company" as the last word in its name.

Officers of the firm are as follows:

| | |
|---|---|
| H. D. (Bill) Wilkinson | Pres. |
| Charles V. Fargo | V. P. |
| Claude E. Quackenbush | V. P. |
| Marion Tolar | Sec.-Treas. |
| Hazel Wilkinson | Director |

This concern is located at 6958 S. Wentworth Ave., Chicago 21, Ill. For many years the firm has represented Sundstrand Machine Tool Co. (sanding and rubbing machines) in the middle west. It has expanded its line to include a variety of quality supplies for finishing rooms in both woodworking and metalworking factories. These supplies and equipment include Binks spray equipment, 3M abrasives and masking tape, hose and hose couplings, steelwool, pumice and rottenstone, repair putty, burn-in knives, stick shellac and stick lacquer, tack rags, felt and sponges, etc.

## Apex Chemical to Handle Optimus Cleaning Equipment

Apex Chemical Mfg. Co., manufacturer of cleaning compounds, 1745 W. Grand Blvd., Detroit 8, Mich., has been appointed exclusive distributor of Optimus vapor degreasers, metal parts washers, dryers, Optimus trichlorethylene and perchloethylene. Announcement of the appointment is made by Mr. Laurence S. Watson, President of Apex.

Mr. Watson also announces the appointment of Mr. Joel N. Cooper, as Sales Manager of Industrial Cleaning and Chemical Sales. Mr. Cooper, formerly with another manufacturer of cleaning materials and equipment in Detroit for over nine years, has had wide experience in various sales and service of the company's business. He is well known for his contributions in alkali and emulsion, as well as solvent-vapor degreasing.

## Wagen, Director of P.P.G. Co.'s Pacific Coast Division

Appointment of Albert D. Wagen as Pacific Coast Divisional Director for Pittsburgh Plate Glass Company's paint division, is announced by E. D. Griffin, vice president.

Associated with Pittsburgh Plate's paint manufacturing operations since 1935, Mr. Wagen joined the firm as an accountant at the Milwaukee plant. He was appointed Pacific Coast divisional accountant during 1941 and served as assistant to the Divisional director of west coast operations during past three years.

A native of Madison, Wisc., Mr. Wagen is a graduate of the University of Wisconsin. He is a member of the Executive Committee, Los Angeles Paint, Varnish & Lacquer Association and a Director of the Los Angeles Chapter, National Association of Cost Accountants.

As divisional director, Mr. Wagen succeeds Louis F. Theurer who has retired after 31 years service with the paint division.

# Color Litho Process for Steel Drums

***Prints up to four colors on heavy gauge steel which later is formed into shipping drums.***

INTRODUCTION of multi-color lithography to the exterior of 55-gallon steel drums, opening new avenues in packaging and merchandising of finishing materials, oils, chemicals, foods and other products, is announced by the Rheem Mfg. Co.,* world's leading maker of steel shipping containers.

Details of the new development, known as Rheemcote, and representing an initial company investment of more than a million dollars, were made known by President R. S. Rheem.

The advent of Rheemcote follows several years of research, in which Rheem engineers collaborated with a manufacturer of large lithograph presses (R. Hoe & Co., New York). A specially designed press was developed to handle large sheets of 18-gauge steel 1/20-inch thick as a conventional press handles paper. Standard lithographic inks are used, with printing done from offset plates of the usual type.

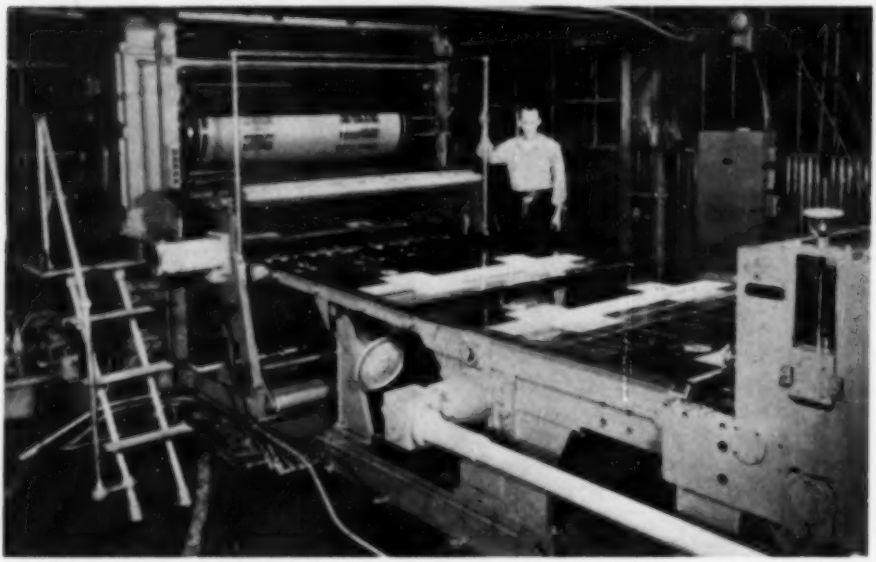
Users of large steel containers can now have two to four-color band names, trade marks and other packaging information placed on their steel containers, and in detail as fine as on paper, thus enabling consistency in package design and labeling, from the smallest can or pail up through the 55-gallon drum.

These multi-color Rheemcote drums reveal the authenticity of trade-mark reproduction which new Rheem process makes possible on 55-gallon steel drums. The Shell drum at left is in familiar red and cream; the Sinclair drum is in red, white and green; special Rheem drum is a first sample of new process in red, white and blue; the 2-color drum at rear is orange and black.

Along with the development of the special multi-color metal lithograph presses, Rheem has created and adapted special machinery which forms and welds the flat lithographed steel sheets into drums without marring or burning the glistening surface. In addition to the printing on the outside of the drum, the new press handles the head, or top of the container in the same way.

Another integral part of the Rheemcote process, which is fully protected by process patent appli-

*570 Lexington Ave., New York 22, N.Y.



**World's largest metal lithography press handles large sheets of heavy-gauge steel like paper. Large 55-gallon steel drums now can be lithographed in two or more colors, including brand names, trade marks and other packaging information.**

cations, is a new method of coating drum interiors with non-corrosive and sanitary linings, permitting bulk shipment with utmost safety of corrosive fluids and foods. Perfectly uniform linings, controllable in thickness to a thousandth of an inch, are roller-coated on flat steel sheets before the drums are formed, providing an inner protective coating free of scale and the variation in thickness common to some sprayed linings.

Although lithography on smaller metal containers—pails and small cans—has been commonplace for years, the Rheemcote process, developed and in operation at the company's New Orleans plant, makes possible, for the first time, similar treatment with absolute precision of steel sheets large enough to fabricate full-size drums. The press lithographs 3x6-ft. sheets of 18-gauge steel at a rate of 4200 sheets —more than 75 tons—per hour.

---

## *Junior Executives Elected for N.Y.P.V. & L.A.*

At the May 9 meeting of the New York Paint, Varnish & Lacquer Association, Junior Executives Group, the following officers were elected:

Leonard Marshall of Devoe & Raynolds Co., Inc.—Chairman.

Irving Sapperstein of Gypsy Paint & Varnish Co.—Vice Chairman.

Sherwood Munson of Breinig Bros.—Secretary-treasurer.

The newly elected Directors are:

Bertram F. Ames of Maas & Waldstein.

Nelson Arnold of Keystone Varnish.

Howard Berman of Breinig Brothers.

Paul Eckhoff of Brooklyn Varnish Co.

The speakers of that evening were Dr. Major Landau of the Quigley Co. and Mr. Justin Miller of Everseal Mfg. Co.

There were 35 members present including Mr. Leon Eldot of the senior group and Mr. Warner Hays, Secretary of the New York Paint, Varnish & Lacquer Association.

# A Mixing Room That's Clean and Safe

***Withdraw stirred paint from 55-gallon drums and pump it into pipe lines to spray booths.***

I HAVE just visited a plant that was recently taken over and reconditioned by a nationally-known firm manufacturing a line of widely used products fabricated of metal—partly of shaped sheet steel and iron castings which must be cleaned and painted.

One of several features of interest is the paint mixing room, where paint from containers is stirred and pumped into and through a circulating system of copper piping extending to and from water-wash spray booths. This room is remarkably clean and well safeguarded. There isn't the slightest trace of splashed or spilled paint on walls, floor or equipment. Several 55-gallon drums of paint stand upright in a row, each drum with a cover to which is fitted an air-driven pump, a propeller-type stirrer and pressure gauges.

"We order our paint materials made to correct viscosity and delivered in removable-head drums by the paint manufacturer", the finishing foreman declared. "A shop lift-truck brings in drums of material from storage; then we can handle them and move them easily with our power hoist which moves along under an overhead monorail. We remove the head of the drum and replace it with one of these clean covers which carries a pump, mixing paddle and adjusting valves. We connect the drum head to the air and paint lines and are ready to go."

Two containers are connected to each paint line so that a switch from one to the other can be made in a matter of seconds. Usually while a filled drum stands by, waiting to have its contents switched into the paint lines, the paint stirrer near the bottom is allowed to operate to keep the paint in slow but continuous motion so that no settled pigment accumulates or remains in the bottom of the container.

Also, in the paint mixing room are two or three drums of thinner resting in elevated horizontal position and fitted with faucets so that thinner can be withdrawn in small containers and used when, if or where desirable. The thinner is used chiefly for cleaning spray guns, paint lines and other paint equipment. Each drum of thinner is electrically grounded.

In further reference to the company's practice of using materials directly from shipping containers, the foreman makes this point: "We believe that in an uptodate paint manufacturer's plant, every precaution is taken to clean new and used drums properly and to fill them with clean, thoroughly - mixed properly - prepared paint materials, so we leave these things up to our supplier. He can adjust the viscosity to suit our requirements too—at a specified temperature. We use considerable quantities of paint materials and our supplier naturally does whatever is reasonably possible to keep us satisfied. So far everything has been entirely satisfactory."—M.K.

---

## New Compressor Firm Organized

A new company, the Paramount Compressor Corp., has been organized in Chicago, Ill., to take over the manufacture of a newly improved all-purpose portable air compressor formerly made by the Compressor Corp. of America, St. Joseph, Michigan.

Paramount's sales and marketing plans call for a new distribution program through hardware, automotive, mill supply and farm equipment jobbers. Waldie and Briggs, Inc., Chicago advertising agency, has been appointed as advertising counsel and a national sales promotion and advertising program is to start immediately. The new firm's office and plant is located at 512 N. Sangamon St., Chicago 22, Ill.

Reconditioned propellers are carefully balanced before they are sent to the paint shop.

## RECONDITIONING AND REFINISHING THE NAVY'S

# Al. Alloy Airplane Propellers

***Removing paint, filing, grinding and buffing blades to remove all pitting; cleaning metal surfaces; spray painting blades in black; and applying yellow markings.***

**By Howard E. Jackson**

THE IMPORTANCE of correctly refinishing seaplane propellers that have been pitted by salt water spray, cannot be overemphasized. Once the protective enamel and anodic film have been broken, corrosion will worm its way through the blades unless it is checked. Preparing the surfaces of salt-water pitted seaplane propellers presents different preparation problems than any that are encountered in preparing land plane props. It is easy (comparatively) to dress down dirt-specked propellers of land planes, but it is something entirely different to check salt-water pits which go deeper and which continue to progress even after the surface of the propeller has been dressed down.

### 3-Blade Aluminum Alloy Seaplane Propellers

It is the job of the Accessories Branch of the "O & R" (Overhaul and Repair) Department at the U.S. Naval Air Station, Seattle, Wash., to see to it that salt-water pitted seaplane propellers are refinished according to the strict Navy specifications.

Propellers that come into the shop for refinishing are off PBY-5's (Consolidated Vultee's "Catalinas", work horses of the war) and some from PBM-5's (Martin Mariners, the scout-transport-general-utility plane of the Navy). These props can also be used on other aircraft. For instance, some of the blades are shortened by 3-in. and put on DC-3's.

The aluminum-alloy Hamilton standard hydromatic propellers are brought directly to the propeller shop from aircraft for overhaul and repair. The condition of the 3-blade (12-ft. in diameter) propellers depends upon the number of hours they have been on the aircraft and the care given them during service. They are completely disassembled and inspected.

### Remove Old Paint and Clean Propellers

Refinishing starts at this point. The parts are put through a trichlorethylene vapor degreaser to remove accumulated engine oil and dirt. Small parts, such as gear segments, cam rollers, nuts and bolts, are put in a wire basket and lowered into the degreaser via monorail and electric hoist. Larger parts, like the propeller blades, dome, hub shells and spiders, are

Metal parts are cleaned in degreaser.

individually suspended by hooks and lowered into and lifted from the degreaser.

Clean parts that need to have old paint removed are taken by hand carts, dollies, gas trucks or fork-lift trucks—according to the size of the parts and load transported—to the cleaning shop in the accessories division. Here the larger steel items are stripped of paint in large tanks of caustic solution. Smaller parts are hand stripped with commercial compound.

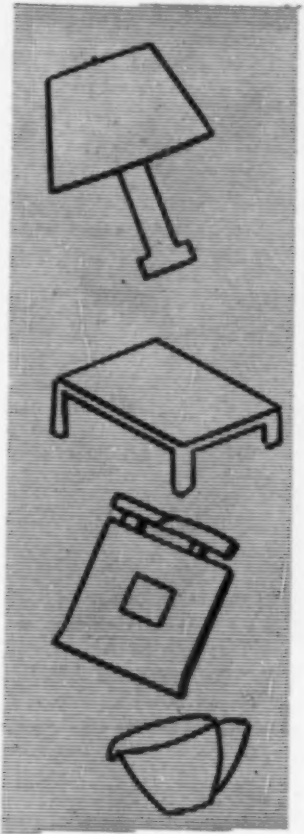
When the paint has been soaked from the large parts and floated off the smaller items, all components are washed in hot water (180° F.). The parts are then put on trough-like tables and brushed down by hand to remove any paint which might have remained in corners or crevices. Lacquer solvent is used during the brushing and scraping processes.

After being cleaned the propeller parts are returned to the prop shop, for close inspection of pits, corrosion, possible warpage, galled (excessively rubbed or scratched) places, etc.; then the parts are routed to the various shops where the defects will be corrected. The plating shop, adjoining the propeller shop, gets most of the work.

### Inspection of Clean Metal; Dressing off Top Surface

If propeller blades and other aluminum parts are to be anodized they are first prepared in the propeller shop. All nicks, scratches and pits must be removed. The blades are set on a straightening rack and the edges are filed down for rough dressing. They are then worked over with power disc sander and rotary buffers until a smooth surface is obtained. Care must be exercised in dressing down the edges and flat sides of the blades because, although the length of the blades can be changed, there must be no change in their basic contour.

During filling, sanding and polishing operations, the blades are checked repeatedly for angle of pitch, contour and straightness. If the blades have been heavily dressed they are checked for balance through the center line on a Toledo scale balance. The usual steps, depending upon the condition of the blades are: Straighten, dress, polish and scale balance. [*To page 36*]



## It's raining requests for

# BASE C5015

## United's Multi-Purpose Lacquer

Requests for samples are pouring in . . . because manufacturers in the lamp, toy, furniture and jewelry fields see the answer to their finishing problems. Base C5015 offers superb finishing results on wood, cold rolled steel, silver or brass. No more storing different lacquers for each material—here is one lacquer that provides good gloss, hardness, strength and resistance to alcohol on aging. Available in clear and colors, full gloss, semi-gloss or flat finish, Base C5015 may be sprayed or dipped.

UNITED LACQUER MFG. CORP.
Linden 6, N. J.

Please send sample of Base C 5015 for use on

_____

Name _____

Address _____

City _____ Zone _____ State _____

- LAMPS
- TOYS
- JEWELRY
- SILVERWARE
- FURNITURE
- and others

**FREE**
**WORKING SAMPLE**
**SEND COUPON TODAY!**

PAINTS · SYNTHETICS
UNITED
LACQUERS · ENAMELS

*United* LACQUER MFG. CORP.

LINDEN 6, N. J. EVERETT 52, MASS.
PHILADELPHIA 19, PA.

Propeller blades are ground down with rotary abrasive wheels and disc buffing wheels.

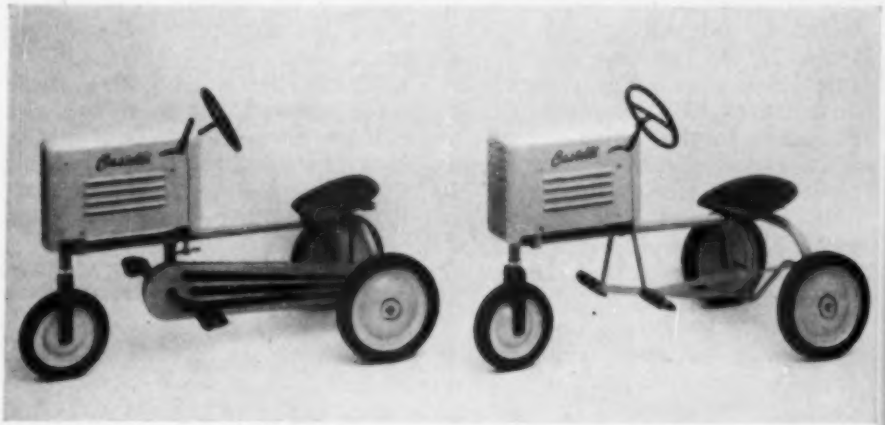
### Clean Blades With Solvent; Anodizing the Surface

After the aluminum blades are polished down with abrasive, straightened and balanced, they are anodized. The plating shop first wipes the blades clean with Stoddard solvent, and then places them in a tank of 8% solution of chromic acid. The blades or other aluminum parts are left in the tank 40 minutes at 40 volts, the amperage, of course, being controlled by the size of the part. It is in the anodizing that extreme care is accorded seaplane propeller blades. The blades are then placed in hot water to set the anodizing.

Steel parts are carefully checked for possible cracks. When the parts reach the plating shop they are placed in a tank of cleaning compound to remove any grease; then they are cleaned in a tank of muriatic acid; then follows rinsing in hot water. Those that need plating go into the cadmium plating tank where they are carefully plated. The coating of cadmium must be put on evenly—according to Navy "spec."—and .001 of an inch of cadmium is deposited every 20 minutes so as not to build up pockets. The thickness of the cadmium, of course, depends upon the part being plated and its condition.

Timing is important. Batches of steel and aluminum parts going through pickling, plating, etc., must be back to the propeller shop by the

# **RANDOLPH** *congratulates . . . .*
# *F. C. Castelli Co., Philadelphia, Pa.*



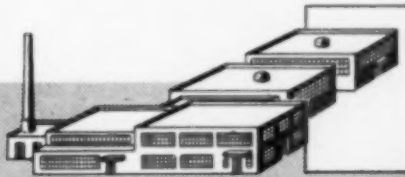
**THE NEW CASTELLI "FIRE CYCLE"**

The Randolph Products Company, manufacturers of industrial coatings, lacquers and synthetic products, encourages creative initiative, technical know-how, marketing insight, not only in its own organization but in others. It offers its congratulations to the F. C. Castelli Company on the latest addition to its toy line, the "Fire Cycle," dramatically-appealing to the young, would-be firemen of the nation. It offers its congratulations, too, on the Castelli Company's choice of an enamel to give this fine article the perfect finish for a smart appearance that will last—a SINGLE ECONOMICAL coat of Randolph Fast Baking Durable S. G. Enamel.

For best results with your own products, rely on a Randolph Finish. Randolph finishes include Lacquers, Enamels, Dopes, Thinners, Clear S. G. for Metal, Colored Lacquers, Texture Enamels, Aircraft Finishes, Specialized Production Finishes. Give your product a selling "lift" with a Randolph finish.

***Inquiries Invited***

Our staff stands ready to consult with you in connection with your finishing operations. If you have any finishing problems, our technicians will be glad to sit down and solve them with you—without any obligation to you, of course.



**RANDOLPH**
PRODUCTS COMPANY
CARLSTADT, NEW JERSEY

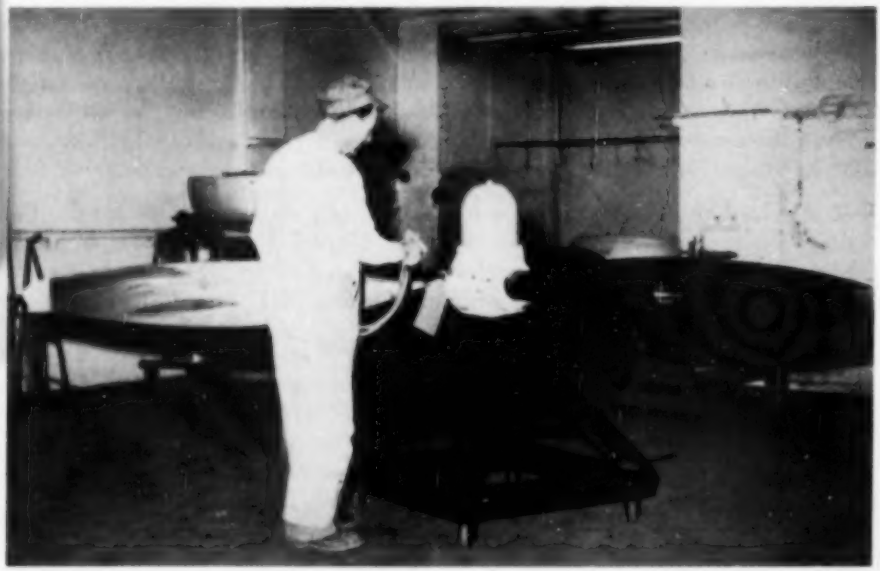
DOPES · LACQUERS · ENAMELS · THINNERS

time the blades have been washed and made ready for assembly, after being dressed down and anodized. The propeller is then assembled and tested by oil testing and balance tests. In the last fine balance test (static balance) the propellers must be balanced to a tolerance .001-in. pounds or torque, which amounts to a tolerance of one copper penny placed 45-in. from the center of the hub. If the penny makes the propeller heavy the prop is within balance; a paper match at the end of the blade will unbalance it and tip it down.

After it has been balanced, the prop is cleaned by hand with Stoddard solvent and sent to the paint shop. In a few cases the blades are new, or already painted, and only the hub-dome must be cleaned and painted. Meanwhile the propeller governors have been hand stripped of paint, checked, anodized, spray enameled and baked, so they are ready to be installed on the engine when the propeller returns from paint shop.

When the assembled propeller reaches the paint shop it is checked out by inspectors to see that all necessary work has been done. Once the props are enameled it is too late to see any flaws. The clean props are hand wiped with lacquer thinner, and at times etched with acid to make the paint stick. A thin, coating of zinc chromate is sprayed on the propeller to serve as a primer, using 35-lbs. air pressure at the spray gun, and 7-lbs. pressure in the primer tank.

Two thin wet coats of non-spec. camouflage black enamel are sprayed on, making three passes per coat



View in paint shop where propellers are mounted on portable stands for spray painting.

# *Shipping Protection!*

## Polyken No. 158
# NON-STAINING TAPE
## for BAKED ENAMEL SURFACES

Here's a strong, non-staining, protective tape made especially for shippers of enameled goods. POLYKEN No. 158 holds movable parts firmly in place during shipment, yet pulls off *clean*, leaving absolutely no stain or discoloration!

POLYKEN No. 158's tensile strength is 46 lbs. per inch of width and the tape pulls off clean at temperatures up to 180° F. It can be safely used on a wide variety of white and pastel finishes (alkyd, urea and nitrocellulose lacquers).

**For Free Samples,** or for free laboratory test on your finish, write today to POLYKEN, Dept. 4-6, 222 W. Adams, Chicago 6.

**TYPICAL USES FOR #158 TAPE**

Appliances

Hospital Equipment

Kitchen Equipment

**Polyken®** INDUSTRIAL TAPE

DEPARTMENT OF
BAUER & BLACK
DIVISION OF THE KENDALL COMPANY
222 W. ADAMS ST., CHICAGO 6

for each side of each blade. The enamel is cut down about ⅓ with enamel thinner and sprayed from cup guns. Enamel is used because it is a tough finish. It comes in 5-gallan cans but is poured into one gallon cans for easy handling and transporting at night to a special paint storeroom in a fireproof building 50-ft. from the paint shop. The spraying itself is simple as the propellers come from the prop shop in horizontal position on wheeled wooden jigs. The blades are turned parallel to the wall while being spray painted.

The props are air dried in the paint shop which is well-ventilated with filtered air. The tips of the blades are then masked off with masking tape and paper so that they can be spray painted yellow. The warning circle of a spinning propeller is something to respect.

### Informative Yellow on Tips, Stencil and Hub

The tips are shot with a thin coat of air-drying lacquer so as to buckle or lift the enamel coating. The lacquer — an orange-yellow gloss — is thinned 50/50 with lacquer thinner. Three thin coats of yellow are applied. The PBY tip is 4-in. wide; the PBM is 6-in.

A stencilled notation, put on each blade 18-in. from the hub, gives its number, pitch of blade, etc. A cut stencil is held against the black blade and yellow lacquer is sprayed on the surface. Whereas 30-lbs. pressure was used for the tips, the air pressure is cut down to 10-lbs per square inch for the stencils. The spray is turned from fan to point, to stop excessive blow-by.

The last step in the paint shop is to paint a ⅝-in. dot with the yellow lacquer on the hub to indicate that the prop has been winterized. After the stencilled notation and circular dot have air dried they are sprayed with a thin coat of clear lacquer for protection.

### Final Inspection; Maintenance of Equipment

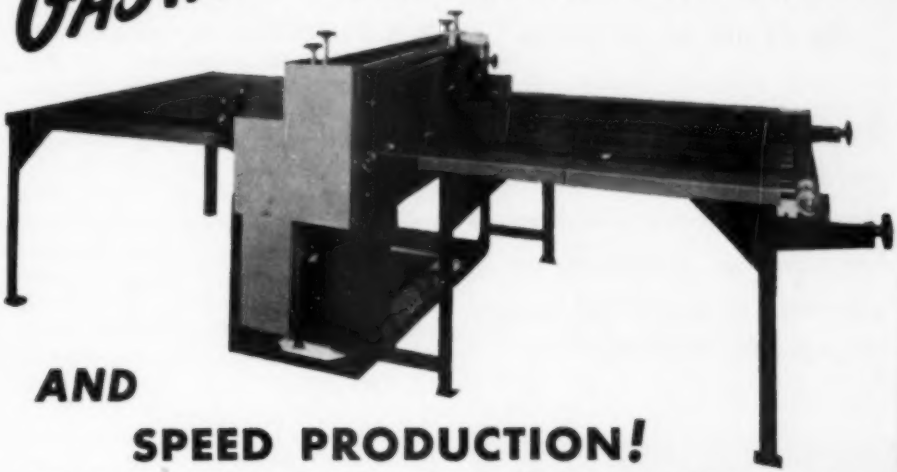
Each step in the cleaning, conditioning and painting is carefully performed. Special attention is given to get the enamel on the leading edge of each blade. A final check-up on the way the black enamel was applied—likewise the stencil and winterizing dot—must pass strict inspection. Spray guns are cleaned twice daily so as to be in the best of condition. This includes blowing the paint back into the tanks, taking heads off the guns and soaking them in lacquer thinner, and then wiping the heads and blowing them out with compresed air to make them clean and dry. The two water-wash spray booths are scraped down and cleaned with solvent once a week; also, the paper is changed on the floor and everything is made ship-shape. There must be no slip-up on refinishing seaplane propellers. Lives and property depend upon the protection given by a properly cleaned and thorough-adhering durable finish.

---

### *P.P.G. Co. Expands its Window Glass Production*

Pittsburgh Plate Glass Co. will spend nearly $2,000,000 on buildings and equipment in expanding its window glass producing facilities at Mt. Vernon, Ohio. Productive capacity of the plant will be increased 50%, making it the firm's largest sheet glass producer, according to Harry B. Higgins, president.

# GASWAY ROLLACOAT FINISHERS CUT COATING COSTS



## AND SPEED PRODUCTION!

The benefits to be gained by using the Rollacoat method of applying finishes and protective coatings, to practically any type of flat materials, are three-fold. In the first place coating speeds are greatly increased over those of any other method and are governed largely by how fast the coated materials can be handled or dried. Secondly, the coverage per sq. ft. per gallon is usually at least 50% greater, the only loss being the paint removed from the rolls at the end of a run. In the third place you obtain finer quality of finish due to accurate control of thickness and evenness of coat.

The applications for Rollacoating are numerous. Top, bottom and sides of practically any type of flat material, whether sheet or coil stock, can be coated by a single pass through the machine.

Special equipment for cleaning, treating, coating, drying, and rewinding strip in continuous process can be constructed to special order.

GASWAY CORPORATION

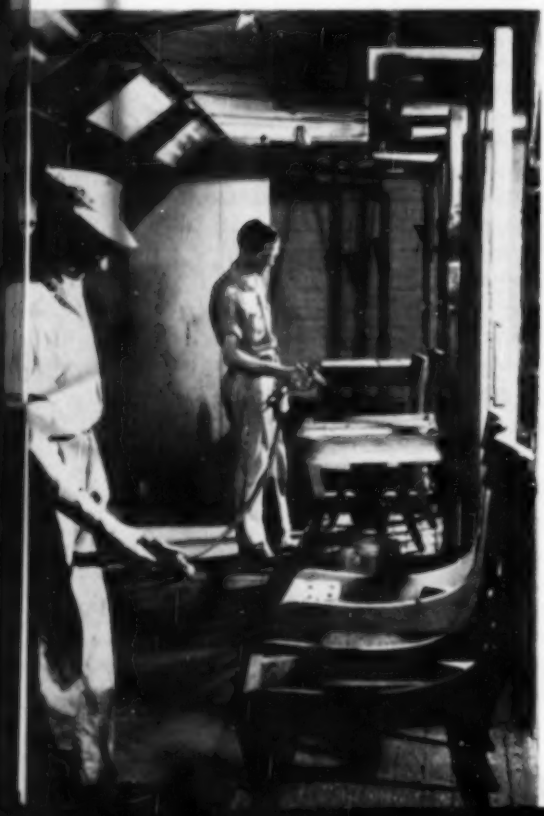
Write or wire today for the 12 page Gasway illustrated book describing Rollacoat Finishers, their possibilities and limitation.

**6463 No. Ravenswood Ave.**
**Chicago 26, Illinois**

# Finishing Cherry & Maple

*By Frank M. Brandon*

**Describing step by step, the process of finishing Wildwood cherry and Golden Beryl maple furniture, as manufactured in a modern conveyorized factory in Louisville, Kentucky.**



WHEN WE conveyorized our finishing system, we ran into all of the problems common to plants that were not originally planned for a conveyor line. Stairways, dressing rooms, rest rooms and elevator shafts proved to be definite obstructions. Yes, we could have gone around some of these obstacles, but it would have resulted in numerous turns and offsets, and would have seriously reduced the productive areas of the conveyor.

### Solving the Problem of Conveyorization

Right alongside of and joined to our original plant we put up a new addition 6-ft. wide by 50-ft. long and three stories high. All stairways, rest rooms and dressing rooms for both men and women were moved into the addition. Only one elevator shaft remained in the original building.

Our overhead monorail conveyor is 3800-ft. long and has trays spaced 7-ft., 4-in. apart on center. The trays are spaced so that single swivel hooks may be interspersed between them. These hooks support chairs, table and night stand leg assemblies, mirror frames, etc. The conveyor operates through a variable-speed drive at 7½-f.p.m.

### Areas for Hand Work And Inspection

Another feature of this installation that proves its value every day is the strategically located areas

[PAGE 42]

# Furniture on a Conveyor

for hand work and inspection. Where these areas occur—for instance, for scuff sanding, wiping stain, sanding sealer, etc—the conveyor makes an elongated U-turn with 30-ft. space between the two legs of the U. At these points all parts in process are thoroughly inspected and the hand operations are performed. Any damaged pieces are set aside for quick patching. A piece that has been repaired and banked along the side is placed on the carrier platform. Every carrier platform must be filled before it leaves one of these areas, hence we accomplish 100% production in the spray booths and in the ovens.

The entire third floor is an oven wherein we force dry both the stains and lacquer coats. The conveyor makes three round trips up to and through this oven. The speed of the conveyor remains the same; the difference in drying time between stains and lacquer coats is accomplished by the different length of travel inside the oven.

### Finishing Schedule for Furniture Made of Cherry

First, let us consider the finish on cherry furniture. Every carrier platform and hook is loaded with clean sanded pieces. They pass through a spray booth wherein the

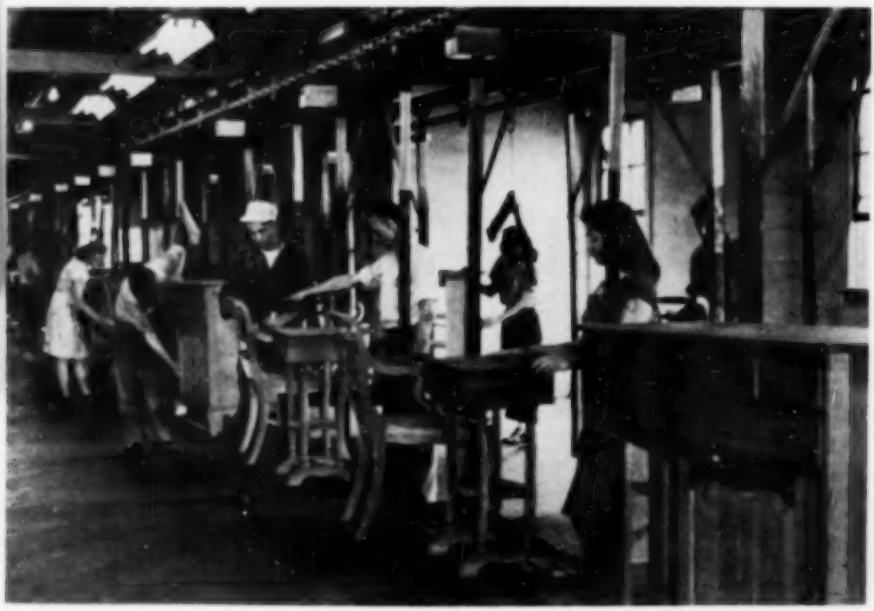
In this hand-operation and inspection area wiping-stain is being wiped on furniture.

NGR stain is applied. As the conveyor leaves this booth it ascends to the third floor and passes through a small force drying oven where the stain coat is dried for 20 minutes at 110° F., with 35% relative humidity. After cooling about 10 minutes, all stained surfaces are given a wash coat of thin lacquer (4% solids) using an atomizing pressure of 45-lbs. and a fluid pressure of 5-lbs. Then the furniture parts travel to air dry for 27 minutes, after which they are scuff sanded with No. 6/0 sandpaper.

Next the items of furniture are given a spray coat of oil wiping stain. After traveling about five minutes they enter an area for inspection and hand work where the conveyor makes a rather long U turn. Here the stained surfaces are wiped, some while they move along on carrier platforms and others while they rest on sturdy wiping benches in the center of the U-shaped conveyor line. After the stain is wiped all pieces are inspected. Any damaged pieces are taken off the platforms for repairs and replaced with pieces that have been repaired.

### Oil Shading Stain is Quickly Fogged on

Upon leaving the oil stain wiping and repair area, pieces of furniture pass through a spray booth where they receive a coat of oil shading stain. This coat is similar to the wiping stain except that it is really fogged on, using an atomizing pressure of 85-lbs., and fluid pressure of 7-lbs. Next in line is an oven



Sanding with No. 6/0 sandpaper after NGR stain and wash coat have had time to dry.

**Economy**
**Durability**
**Smartness**
**Dignity**
**Prestige**

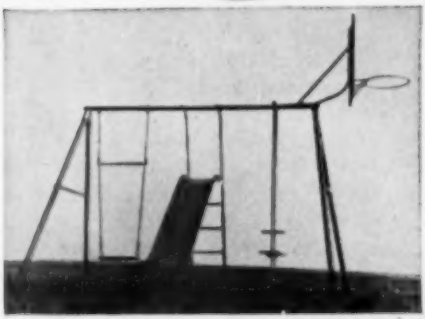
All these highly desirable Sales Producing Qualities are imparted to products with

# YARNALL

*Industrial Finishes*

1885

1950



**LUSCOMBE PLAYGROUND EQUIPMENT**

The attractive weather resisting finish on this popular Gym Set manufactured by Luscombe Engineering is a coating developed by Yarnall.

Become acquainted with our complete line

DIPPING AND SPRAYING ALUMINUM • FLOCK ADHESIVE UNDERCOAT • WRINKLECAST • WOOD AND METAL PRIMERS • SPECIFICATION MILITARY FINISHES • FAST AIR DRY SYNTHETIC FINISHES • YARLITE BAKING ENAMEL • HAMMERCAST • EMBOSSING FINISHES

Also special finishes to meet your particular requirements

ORIGINATORS AND MANUFACTURERS OF THE UNUSUAL IN...

*Industrial Finishes*

●

**YARNALL PAINT COMPANY**

INDUSTRIAL DIVISION

PHILADELPHIA 48, PENNSYLVANIA

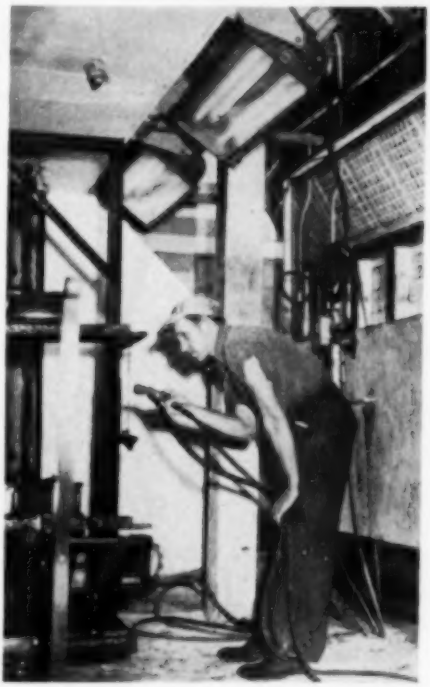
where the work is dried for two hours and ten minutes at 136° F., with 33% relative humidity. An interval of 38 minutes for cooling and the furniture parts enter another area for inspection and hand work. Here the surfaces are lightly steelwooled and inspected.

Next operation is a spray coat of lacquer sealer (18% solids) using an atomizing pressure of 50-lbs., and a fluid pressure of 18-lbs. The sealer coat is force dried in the first floor oven for 18 minutes at 110° F., with 30% relative humidity. Upon leaving this oven, the drawers for case goods enter a spray booth and receive a spray coat of drawer coater before they ascend to the second floor. Following 15 minutes of travel, the conveyor enters another inspection area where the sealer coat is sanded with No. 6/0 sandpaper.

**Pressurized Spray Room; Varnish; Oven Drying**

All surfaces are blown clean with compressed air and carefully tack ragged before the pieces of furniture enter the pressurized spray room. Outside air is brought in filtered, warmed during cold weather, forced into this room through another set of filters, and distributed evently throughout the entire area. This clean, conditioned air is brought in at the rate of 26,500-cu. ft. per minute while exhaust fans remove 24,000-cu. ft. per minute, thereby maintaining a pressure of 2500-cu. ft. per minute to prevent any dust, lint or other particles from being drawn into the spraying area.

Within this pressurized spray room a coat of long-oil varnish (50% solids) is sprayed on, using an atomizing pressure of 68-lbs. and fluid pressure of 18-lbs. After this top coat, the pieces of furniture travel for 22 minutes to allow proper flow-out of the varnish before they enter the oven on the third floor where drying continues



Back of and above sprayer are removable filters through which air enters spray room.

for two hours and 20 minutes at 136° F., with 33% relative humidity. The temperature and humidity in all ovens are automatically controlled with thermostats and moisture control units. Thermometers (recording) and hygrographs provide a permanent record during all operating time. [*To page 48*]

# NATIONAL'S "Mity-Midget"

## FOR WORK OF ANY SIZE

Whether removing burrs on huge castings or putting a fine finish on relatively small surfaces, National's "Model 400" will do the job better and faster. Has a 3/16" orbital stroke . . . operates at 5000 to 6000 rpm . . . weighs only 4 lbs. . . . costs $79.50. Reliable . . . powerful . . . will not stall. Write for full details today or see your dealer.

MODEL 400

*Fast...Light...Powerful!*

NATIONAL AIR SANDER, INC.
2818 AUBURN ST., ROCKFORD, ILLINOIS

Leaving this final drying oven, the pieces of furniture travel by conveyor to the first floor where they are transferred to the warehouse. They remain here until ordered out. Temporary storage in the warehouse provides extra time for drying and seasoning the finish before it is rubbed. On orders shipped this practice provides clean freshly-rubbed furniture.

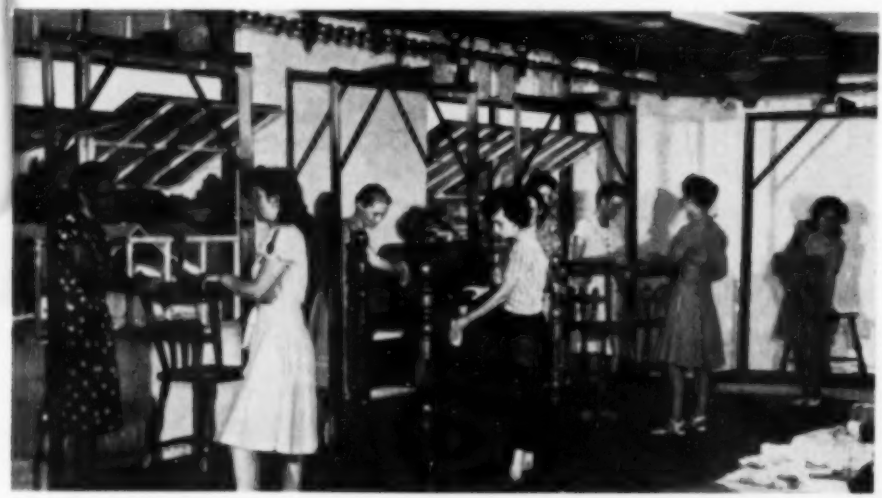
### Maple Furniture; No NGR Stain

Maple furniture follows the same finishing procedure as cherry, except that we do not use an NGR stain. Starting with the oil wiping stain, followed by a period of drying, maple furniture is slightly highlighted with No. 2/0 steelwool used sparingly. From this point on, maple furniture receives identically the same finishing operations as cherry furniture.

For rubbing we use 3-F pumice and rubbing oil. Portable machine rubbers are used on all tops, to do the preliminary rubbing. All tops are finally rubbed by hand, along with the fronts and ends. One group of operators does all of the machine rubbing on tops; and another group does the final rubbing by hand. Rubbed pieces of furniture are transferred to another group for cleaning up. All surfaces are carefully wiped with a specially formulated cleaning solution to remove any traces of rubbing oil and pumice. This treatment leaves a clear satiny finish which is a characteristic of Consider H. Willett's furniture.

### *Meyer to Represent Zapon in Iowa, Nebraska, Kansas*

Appointment of Benedict H. Meyer as representative for Zapon finishes in Iowa, Nebraska, Kansas and western Missouri has been announced by Casper Apeland, General Manager of the North Chicago, Ill. branch of the Atlas Powder Company's Industrial Finishes Department. He will make his headquarters in Des Moines.



Sanding the sealer coat in one of the areas set up for hand operations and inspection.

# new Monsanto enamel recommended

## when the heat's on your margin of profit

**SHORTER BAKING CYCLES** deliver more profits in toys, housewares, and other low-priced articles—by increasing output per hour, lowering production costs per item.

Monsanto's new research-built **SYNTHETIC ENAMELS** produce fine, hard films with extremely rapid bakes. For example, Monsanto colored synthetics, in 1 mil film thickness, bake to normal hardness in 7 to 40 minutes at 325° to 250° F. Average baking schedule for Monsanto white enamels is 8 to 60 minutes at 325° to 250° F.

And—you won't have to worry about ups and downs in the quality of your shipments. Monsanto does a series of "watchdog" tests on every batch. No shipment gets a passing mark unless it gives you all of these qualities.

1. **High gloss**
2. **Excellent adhesion, flexibility**
3. **Non-chipping, mar-resistance**
4. **Uniformly short baking cycle**
5. **Good coverage**

**VOLUME USERS**: step-up the quality of your finish, while you lower production costs with Monsanto's new rapid-bake enamels. Send *today* for full information on Monsanto synthetic enamels for your mass-production items. The coupon is for your convenience.

MONSANTO
CHEMICALS—PLASTICS

SERVING INDUSTRY . . . WHICH SERVES MANKIND

MONSANTO CHEMICAL COMPANY,
Merrimac Division, Dept. IFM10,
Boston 49, Mass.

Please send me information on Monsanto synthetic enamels for my products.

Name & Title _____

Company _____

Address _____

City, Zone, State _____

# Pearl LACQUER FINISHES ON SIMULATED PEARLS

By H. A. MATTIN
The Mearl Corporation

PART II

**Revealing the details of how simulated pearls are made and how they are given that enduring lustrous pearly finish which excites the admiration of all who see them. This 2-part article includes technical information about both natural and synthetic pearl essence; how pearl essence is carefully mixed with nitrocellulose lacquer before being used, and how iridescence and color tinted effects are produced.**

THE QUALITY of the pearl essence is the most important factor in the manufacture of simulated pearls. The basic material in pearl essence is the guanine crystals. A standard pound of paste contains 11% guanine. Thickness of the paste is no criterion of value, as a high-viscosity cotton may be used to make a paste which is thick, despite its low crystal content, or conversely, 11% of crystals may be suspended in a very thin lacquer which will give full value.

### Testing Pearl Essence to Determine Values

Essence should be tested on the bead. Luster can be tested by dipping, but if the essence base is thick it will be necessary to continue dipping beads to ascertain how many gross can be obtained from one pound of essence. The paste may have been thick enough to affect the viscosity of the dipping solution, with the result that more essence will be taken up on the bead than normally. This would

give good luster on the test bead, but it would not coat as many beads as a paste of normal viscosity.

Adulteration with synthetic pearl essence or metallic powders can be detected by lack of brilliance, and by an ash test. Most synthetic pearl essences are inorganic, and leave an ash, while pearl essence made from fish scales leaves no ash. The simple test can be performed by any chemical laboratory.

Pearl essence should not smell fishy or putrefactive, or have other than a solvent odor. Even if an essence of bad odor retains its brilliance, it should not be used, as the pearls will eventually turn yellow, an action which will be hastened by exposure to sunlight.

### Add Lacquer Slowly to Pearl Essence; Stir Gently

To get the best results from pearl essence, the lacquer should be added to the essence in small amounts, and each increment should be stirred into it until a smooth paste is formed, before adding more lacquer. When a smooth, thin suspension is obtained, it can be added to the rest of the lacquer, smoothed out and thinned to dipping viscosity.

If the essence is added first to the thinner it will be dispersed in lumps which are hard to break without prolonged stirring. The lumps cause "starriness", and if you attempt to stir them out, the essence crystals will tend to break, giving a chalky or dull effect. For this reason, pearl lacquer should not be stirred violently. It should be stirred gently with a paddle moved by hand.

### Synthetic Pearl Essence Can Be Used as Undercoats

Since natural pearl essence is so expensive, synthetic pearl essence is being used in undercoats instead of the natural product. Some of the synthetic products on the market are inorganic salts of mercury, lead and tin, put up in bases similar to that used for the natural pearl paste. They should be worked into the lacquer in the same way as the natural pearl essence. Synthetic pearl essences are good undercoats, and will probably continue to be used as a cheap way to overcome bad color in a bead. The price of the synthetics is so low that even if natural pearl essence drops to its prewar low price, synthetics may find continued uses.

The "imitation" pearl essences should be examined for gram content or relative covering power and for color (they should not be dark); and, of course, for luster, as they are not of much value if they lack some pearliness or brilliance. While synthetic undercoats do not have the marked pearliness of natural pearl essence, they tend to enhance the pearliness of a top coat of natural pearl essence. A combination of undercoats of a good synthetic, with a top coat of brilliant natural pearl essence, will produce a better pearl than will several coats of a mediocre pearl essence.

A typical formula for the combined used of synthetics and pearl essence is as follows:

Three bottom coats containing 6-oz. per gallon of Nacromer WP, (colored pink) followed by three top coats of natural essence, at 3-oz. per gallon tinted to the desired

shade. Use lacquer solutions similar to those used with natural pearl essence.

### Use Slow-Drying Nitrocellulose Lacquer with Pearl Essence

The lacquer used with pearl is a nitrocellulose solution, with a solvent of either amyl acetate or butyl acetate. These slow-drying lacquers are used because the slower the pearl lacquer dries, the better luster the pearls will have. Amyl is better than butyl acetate, and the so-called slow-boiling or fermentation amyl is better than the pure or synthetic material, as the percentage of impurities present makes it slower drying.

The nitrocellulose used should be of the high-viscosity type. A type between 20 to 30 seconds, of the bleached or "silver" cotton is best. Higher viscosities of nitrocellulose up to 60-80 seconds, are also employed, but these require high grade solvents, as they have limited solubility.

Another problem encountered in the use of high-viscosity materials is that since more solvent is required to thin the pearl solutions down to appropriate dipping viscosities, the film solids content is decreased to a further degree. The resulting film on the bead is very thin, so that if too much pearl essence is used, it will not be retained by the film, making the pearl less durable than usage demands. However, if properly applied, avoiding these difficulties, the pearl will be satisfactory as the layers do not merge and the reflectance is better.

A humid atmosphere during dipping is the greatest handicap to pearl manufacture. In an atmosphere of excess humidity, "blushing" occurs; that is, the pearl turns white and the pearliness is lost. This is caused by the nitrocellulose precipitating out on the bead, instead of forming a clear, transparent film. Fast drying solvents create a cooling action as they evaporate; this precipitates the moisture in the air on the bead, and a small amount of it goes into solution with the solvent. The fast-drying solvent evaporates, leaving the water. Since nitrocellulose is insoluble in water it is thrown out of solution.

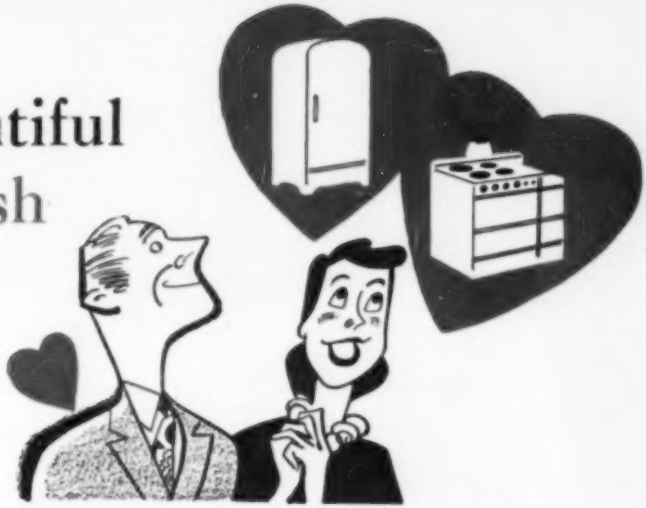
If slow-drying solvents are used, any moisture that is absorbed from the air will evaporate first, leaving the solvent. This will deposit the nitrocellulose as a film instead of throwing it out. Blushing can thus be prevented by the use of slow-drying solvents.

### Slow-Drying Solvents Help to Prevent Blushing

A solvent that is not fast-drying enough to create complete precipitation, but still dries too quickly, will result in partial blushing, which dulls the pearl luster. The essence manufacturer is often accused of shipping inferior material when this occurs, though the dulling is caused by a film which is not perfectly clear, and which obscures the reflecting qualities of the pearl essence.

In extremely humid weather even amyl acetate is not slow-drying enough to prevent blushing, and retarders must be used. Caution must be taken to avoid using too much retarder (10% is maximum) as this would slow up the drying too much. Butyl propionate is an

# A Beautiful Finish



## Makes the Heart Grow Fonder . . .

It takes fond hearts to make sales—industrial, wholesale, or retail. For a buyer must fall in love with a product before it can be sold and contribute toward profits. *That's where* ZAPON *comes in!*

For a metal finish that has striking beauty, durability, and resistance to use and abuse—try ZAPON. Our Customer Development and Customer Service Departments will "tailor" a finish suitable for *your* product and *your* production line. Why not turn your finishing problems over to us?

***Service from every angle . . .***

***that's*** ZAPON

**ATLAS POWDER COMPANY**

# Industrial Finishes

**Stamford, Conn. • North Chicago, Ill.**

BINKS
Dynaprecipitor Water Wash
SPRAY BOOTHS
LOCAL & STATE
HEALTH
AUTHORITIES
APPROVED
INSURANCE
UNDERWRITERS

**NO OTHER**

# Spray Booths

**GIVE YOU**

**ALL THESE**

# Advantages

1 **APPROVED PERFORMANCE AND CONSTRUCTION**

When you install a Binks Dynaprecipitor Spray Booth in your finishing department you have done everything possible to eliminate fire and health hazards. These booths meet the requirements of local and state authorities... are endorsed by insurance companies. They are the mark of a safely equipped shop.

2 **EXHAUST AIR WASHED 5 TIMES**

The patented Dynaprecipitor principle draws fumes and over-spray through 5 unbroken water-curtains before it is vented...clean and dry.

3 **NO NOZZLES TO CLOG**

The unique water distribution system in these booths eliminates nozzles...guarantees thorough washing.

4 **FASTER PRODUCTION**

Stops *drift*...lets you place spray stations closer to each other. Minimizes clean-up time.

5 **BETTER SHOP MORALE**

There is no paint smell...air in the shop remains fresh... and the shop stays cleaner.

6 **RECLAMATION OF OVER-SPRAY**

All paint is washed out of the over-spray and trapped in the collecting pan where it can be easily reclaimed.

7 **SIMPLIFIED CONSTRUCTION**

Dynaprecipitor booths are shop fabricated in standard sizes from 4 to 20 feet wide. Panels bolt together with gasketed joints, quickly and simply.

8 **PRICED RIGHT**

This is equipment on which you do not pay a premium to get the best. Dynaprecipitor spray booths are unsurpassed... but you don't pay any more for them.

9 **ECONOMICAL TO OPERATE**

The same water is recirculated.
Only cost is operation of the circulation pump.

"We hope buyers will compare our Dynaprecipitor with other water wash booths.

It's always very convincing!"

J. J. Roche
Chairman of the Board

**Send for Bulletin 500**

and see for yourself the many great advantages of these modern, well engineered spray booths. No obligation.

**Binks** MANUFACTURING COMPANY

3116-40 Carroll Ave., Chicago 12, Ill.

NEW YORK DETROIT LOS ANGELES ATLANTA BOSTON CLEVELAND
DALLAS MILWAUKEE NASHVILLE PHILADELPHIA PITTSBURGH
ST. LOUIS SAN FRANCISCO SEATTLE WINDSOR, ONTARIO, CANADA

# IF IT'S TRUE "HOT LACQUER" ...IT'S BROLITE!

★ ONE COAT OF *TRUE* "HOT LACQUER" BUILDS BETTER, RUBS MORE BEAUTIFULLY, AND LASTS FAR LONGER THAN TWO OR THREE COLD COATS.

PHONE TODAY AND GET FULL INFORMATION ABOUT THIS GREAT TIME AND MATERIAL SAVING PRODUCT.

**ANDREW BROWN COMPANY**

**Phone the nearest factory today...in MARYLAND ask for LAUREL exchange.**
**DALLAS: VICTOR 4-6451 ... SEATTLE: PR 4553 ... LOS ANGELES: JE 5201**

excellent retarder, as it doesn't mix with water and is itself a good solvent, so that a film is always deposited. Water miscible retarders act as humectants; that is, they take up water and retain it, sometimes to such an extent that the lacquer will not dry.

Another advantage of using a slow-drying solvent is that a smoother film is obtained. The slow-drying action prevents eruptions on the surface, as the solvent diffuses slowly to the outer layer and evaporates gradually. Fast-drying solvents evaporate rapidly, leaving tiny holes in the film, which give a rough surface and therefore a poor optical effect.

### Butyl Acetate for Winter; Plasticizer Used Sparingly

Butyl acetate is a good solvent in the winter, when humidity is low, but anything that dries more quickly than this should not be used. Diluents should not be used in pearl lacquer, as the high viscosity nitrocellulose generally used can tolerate only a small portion of them. These diluents often have an undesirable odor, are slightly toxic, and produce a film which is not as good as that obtained when true solvents are used.

Plasticizer is not ordinarily used in pearl dipping. It is not necessary, as the drying action tends to shrink the lacquer around the bead, making for good adhesion. The absence of plasticizer prevents penetration by subsequent coatings and gives a better optical effect. However, small amounts can be used, as it tends to slow up the drying, thus minimizing the effects of blushing. In case of string dipping it prevents brittleness of the string or wire.

### Lacquer Soluble Dyes Used to Tint Pearl Lacquer

Colors are used with pearl lacquer in top, base and middle coats. Pearl essence will "silver" a color when used with it, or "gun metal" a color when used over it. This tends to make the pearl look black or dark; therefore the nearer the top coat the color is, the less the greying effect will be. The best method is to use color in a clear coat over the finished pearl. (See Formula I).

The colors used in pearl lacquer are the so-called spirit or lacquer-soluble dyes. These dyes are soluble in alcohol, toluol or any of the ethers used as lacquer solvents. The dye should be dissolved in a solvent compatible with pearl lacquer, filtered until the solution is clear, and used sparingly in a formula. Usually a tenth of 1-cc. per gallon is sufficient.

The dyes must be soluble in the solvent, and must not "bronze out" or crystallize in the film when the solvent evaporates. Most of the spirit-soluble dyes are fugitive to light and will fade out of the bead. Light fastness in colors must be specified when making a purchase. Another method of adding color to pearl is the use of transparent colored lacquers. These are lacquers made with dye solutions instead of pigments.

Fluorescent colors are dichoric in effect; that is, they present, or appear to present, different colors by transmitted light when viewed in different directions. The result

is attractive, but this type of color is generally fugitive and fades out rapidly.

Some colors appear to be one shade in natural light and another under artificial light. Certain types of pearl essence also have this property, being normally white in daylight and greyish under artificial light. Manufacturers should remember that pearls are usually sold, and often worn, under artificial light.

### How to Tell Genuine Oyster Pearls

The difference in appearance between the natural pearl and those hitherto described is principally one of color. The oyster pearl has what is sometimes called an orient, that is a play of colors somewhat similar to the spectrum effect of a rainbow. The layers of material with which the oyster protects itself from the irritant are not continuous and smooth, but really onion skinned or striated.

One of the tests for a natural pearl is to rotate it against one's teeth; the roughness of the oyster pearl is characteristic. These striations in the pearl create a series of "finely divided" parallel lines which comprise what the physicist terms a diffraction grating, and white light passing through such a grating is dispersed or split into its component colored parts and thus forms a spectrum. Coloring in this fashion is achieved in a simulated pearl by another principle of optics. This, the pearl industry terms iridescence.

Iridescence is a phenomenom brought on by the interference to normal reflection when light is reflected from two surfaces that are very close together. If white light strikes a mirror, white light will be reflected. If one puts a very thin sheet of transparent material in front of the mirror, part of the light will reflect from the surface of the sheet, and part will go through the sheet and reflect from the mirror. When the light returns from the two surfaces simultaneously, some of the component colored waves are neutralized and some are strengthened, and a multi-color effect results. If the sheet is of the requisite thickness, red or roseate (the most pleasing optically) will predominate; with a thinner sheet, green will be more in evidence. An everyday illustration of iridescence is a thin film of oil floating on the mirror-like surface of water.

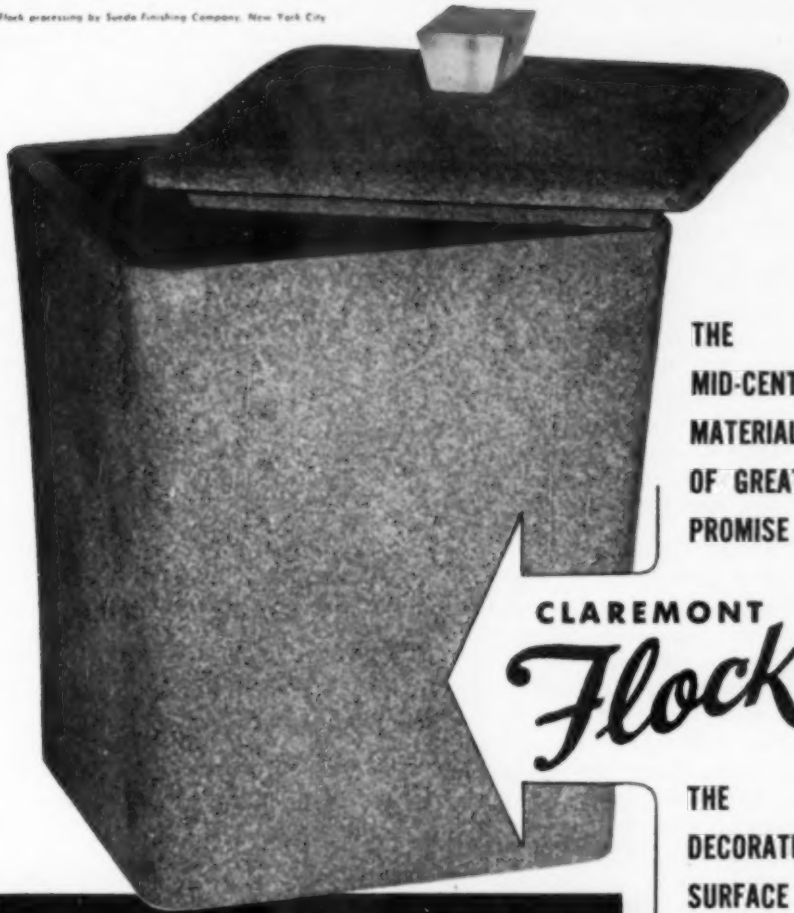
### Iridescence in Natural and Simulated Pearls

Iridescence in a simulated pearl is achieved in a similar fashion. A film of cellulose acetate, glass, etc., is polished to a mirror-like surface with bismuth oxychloride. This is then covered with a thin fillm which does not merge with it, such as one of nitrocellulose. Here you have your analogy complete—the mirror and the thin transparent film for the light to go through and emerge as a rainbow of colors.

### Technique in Finishing "Oriental" Pearls

The so-called Oriental pearl is made by applying three coats of nitro-cellulose pearl lacquer, and then a coat of clear cellulose acetate lacquer. This is polished with bismuth oxychloride and then

*Flock processing by Sunda Finishing Company, New York City



THE MID-CENTURY MATERIAL OF GREAT PROMISE

CLAREMONT *Flock*

THE DECORATIVE SURFACE THAT POSSESSES UTILITY VALUES!

Pre-coated with an adhesive and then top-finished with a sprayed-on surface of bright green Claremont Flock, the Ice Cube Jug shown above, makes a strong bid for market acceptance. Flock surfacing adds decorative value and serves as an extra, protective exterior insulation. When planning new products, check Claremont Flock. These magic fibers in rayon or cotton, may solve your finishing problem!

**INQUIRIES INVITED**

• Claremont Flock is available in bulk, in colors, in quantity for special spraying-on finishing purposes. Write for samples, color charts, prices.

**CLAREMONT WASTE MFG. CO.**

CLAREMONT, NEW HAMPSHIRE

topped with a very thin nitrocellulose lacquer. The nitrocellulose must be dissolved in amyl or butyl acetate, which are non-solvents for cellulose acetate, so the coats of lacquer do not merge. When it dries, iridescent colors develop.

If further coats of pearl lacquer are to be applied over the nitrocellulose it is necesary to use a material that will not attack the nitrocellulose or merge with it. The pearl is, therefore, again polished with bismuth oxychloride to enhance the iridescence, and dipped into gelatin dissolved in water. When this is dry, any number of successive pearl coats can be applied; the usual number is three.

### More About Producing Iridescent Beads

Iridescent beads (as distinct from pearls) are made by applying a cellulose acetate coat on a clear glass or methacrylate bead, polishing it with bismuth oxychloride, and then coating it with a thin nitrocellulose film. As methacrylate beads "craze" under the action of solvents, such as acetate solutions, an insulating coat of gelatin dissolved in water is generally applied first. This may or may not be polished. To make these iridescent beads more durable, an insulating coat of gelatin can be applied over the nitrocellulose and then finished off with clear lacquer.

The source of the bismuth oxychloride is important. Most of the grades contain small amounts of lead and other impurities. Lead reacts with sulphur in the air or in the gelatin to form black lead sulphide which is the cause of the blackening of iridescent pearls. Special treatment of the bismuth salt overcomes this.

### Conclusion

Man can manufacture a very good simulated pearl. But he can do more. He can make a pearl that is more lustrous, more durable, freer of flaws, rounder and of better color than the oyster can make. At first, simulated pearls were worn shamefacedly by those who could not afford natural pearls, but hoped others would think they were wearing "real" pearls. The industry grew to its present proportions in the early 1930's when simulated pearls were accepted as costume jewelry, and were no longer thought of as imitations, but as a fashion accessory acceptable in itself. If the quality of simulated pearls continues to be maintained and improved, only the oyster need fear for the future.

---

## What Caused Pulled Grain in Finishing

*By H. H. Connelly*

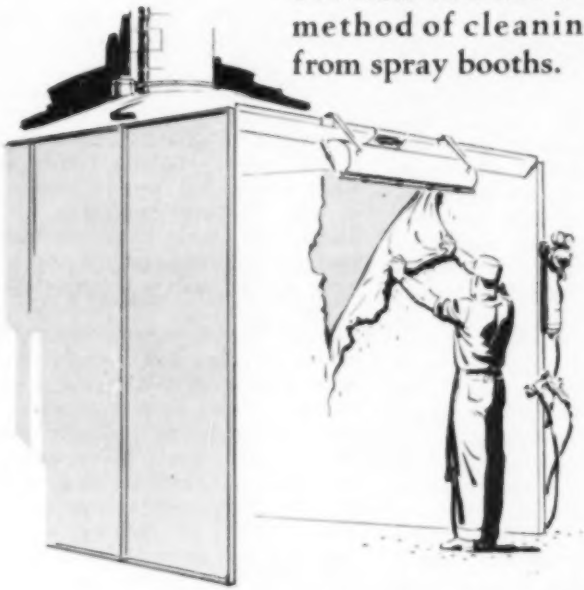
WHEN a baffling trouble seems to be uncontrollable in the finishing room, the logical procedure is to check carefuly all operations leading up to the finishing process.

I have in mind a manufacturer of walnut veneered cabinets who prior to the installation of his overhead conveyor system, had no appreciable trouble in the finishing room. Then suddenly a lot of rejects began to appear. Veneered surfaces showed all the symptoms of having had splinters torn out, leaving pits that were not being filled. Minute inspection of all stock in the white failed to show

# PLASTRIP

## SPRAY BOOTH COATING

Provides the most satisfactory method of cleaning overspray from spray booths.



Spray on clean booths — when sufficient overspray accumulates to justify cleaning, simply strip off in large sheets — a clean booth in a matter of minutes. An otherwise messy, dirty, disagreeable job requiring hours of hard work . . . accomplished in a few minutes by using Plastrip.

## PROTECTIVE TREATMENTS, INC.

*Specialists in Strippable Coatings Since 1947.*

420 DELLROSE AVE. DAYTON 3, OHIO

these defects; and they were not corrected by spraying on a 10% glue size solution before staining and filling.

Several interesting facts came to light when a comparison was made of previous methods versus the conveyorized methods of finishing. 1) Parts were sprayed in a horizontal plane by the old method but in a vertical plane on the conveyor. 2) Sealer was sprayed heavier by the first method, without the danger of sagging. This resulted in a thicker undercoat and heavier sanding after the sealer coat had been put on. 3) Lacquer was sprayed heavier because of the same reason. 4) An experiment with jute, used to wipe off the excess filler, revealed the astonishing fact that the tow was actually pulling out wood fibers when the surface was wiped against the grain. The use of rags and waste instead of tow caused the same trouble, but to a lesser degree.

This deduction was conclusive evidence that the fault was not in the finishing but would require a changing of methods in production all along the line leading up to finishing. In this instance, changes were made as far back as the cutting of veneer.

The walnut veneer was being produced on a stay log at the rotary lathe. As a consequence, one side was cut considerably "tighter" than the other; this resulted in looser grain than would have been produced by cutting on a slicer. When this veneer was matched into a panel, the loose side was up on every other piece, and later these pieces showed the defective torn-out grain.

Some changes were instituted in the cabinet department. Sanding was divided into two operations. The first sanding was done with No. 2/0 grit which smoothed the surface and removed the veneer tape. A 25% glue-sizing solution was then brushed into the grain, and the panels were stacked on spacing blocks to promote thorough and rapid drying. Then the surfaces were lightly sanded with a No. 4/0 sand belt. Sanded panels were then ready for finishing.

It was found necessary to spray a light walnut stain over the panels in order to bring their smoothly sanded surfaces to the correct color. Walnut filler failed to penetrate the surface sufficiently to give the desired tone. The first run, after these changes were made, resulted in a 75% decrease in defects.

Further steps were taken to correct the trouble by adding a third coat of lacquer to give a thicker finish, to permit heavier rubbing. Improvements were noted, but problems developed at the rubbing operation. It was found that nearly twice the time was used to rub the surfaces to a high gloss as had been previously used.

The one coat of lacquer sealer, sprayed in the vertical plane, didn't produce enough film for effective sealer-coat sanding, and frequent sanded-through places then resulted in light spots and edges. Accordingly the number of sealer coats was increased to two, and a heavy sanding with No. 5/0 finishing paper was instituted. The number of lacquer coats was then reduced from three to two, with the result that production in rubbing operations was doubled.

---

## *Kraft Chemical Now Represents Better F. & C. in Midwest*

Gerald Kraft, Sales Manager of Kraft Chemical Co., 917 W. 18th St., Chicago 8, Ill., announces that the company has been appointed Midwest sales representative for Better Finishes & Coatings, Inc., Newark, N.J., manufacturer of paint, plastic and chemical products.

Kraft, large distributor of industrial chemicals of all types throughout the Midwest, will carry warehouse stocks of the Better Finishes line in Chicago, Detroit and at other key points. Featured among BFC products is the extra high quality technical grade Chromic Acid Flake of which the Newark firm has recently announced new commercial production.

**NACROMER is an excellent substitute for Pearl Essence where cost is a factor and where the high brilliance of natural pearl is not necessary.**

**It is—**

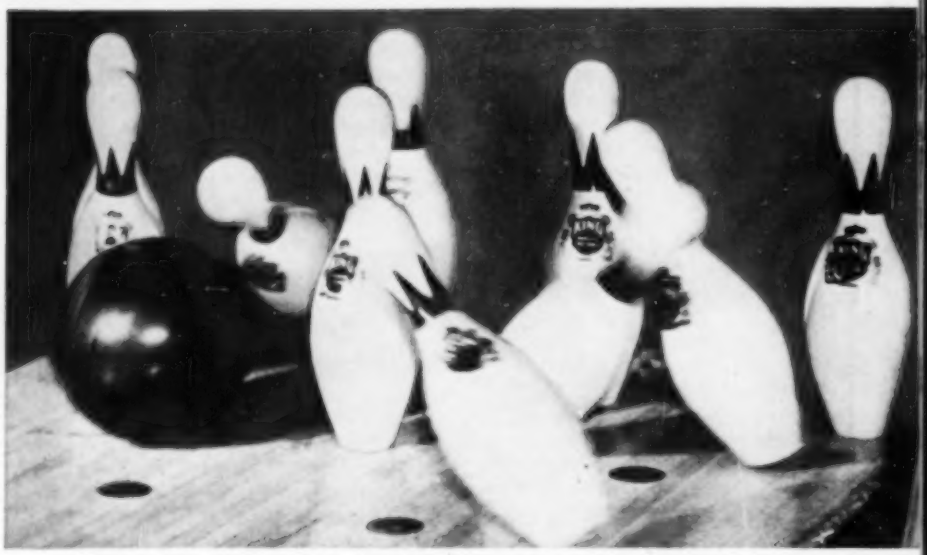
- **Stable**
- **INERT**
- **NON-CORROSIVE**

**Sample and literature sent on request.**

**THE MEARL CORPORATION**

**153 WAVERLY PLACE NEW YORK, N. Y.**

***"World's Largest Producer of Pearl Essence"***



BECAUSE BOWLING PINS TAKE SUCH EXTREME PUNISHMENT, they need a finish that can resist hard knocks without chipping or cracking—added protection against splintering, which destroys the bounce and balance required for perfect play. A special formulation of tough, durable Du Pont lacquer meets these requirements—keeps thousands and thousands of bowling pins in service over longer periods of time.

# TENPIN FINISH WITH NINE LIVES

## Du Pont Lacquer for Bowling Pins—typical of the 12,000 Du Pont finish formulas working for industry today

• Today the extra life of bowling pins finished with a special Du Pont lacquer is a vital factor in the efficient operation of the country's leading bowling alleys.

The formulation of a finish to withstand the continuous, crashing impact of 16-lb. balls, bowled at hurtling speeds, is the result of alert teamwork of Du Pont and a leading manufacturer.

Whether you seek a finish that makes your product last longer—that adds beauty and sales appeal—that requires special properties to fit some particular need—or a finish that may reduce overall production cost—contact the Du Pont Finishes sales technician in your area or write to *E. I. du Pont de Nemours & Co. (Inc.), Finishes Div., Wilmington 98, Del.*

HOW FAST WILL A FINISH FAIL? The Accelerated Weathering Cabinet gives Du Pont paint chemists a speedy answer on the probable rate of fading and chalking. It exposes finished test panels to the destructive ultraviolet rays of a carbon arc. And to increase the severity of the test, a water spray is played on the panels for eighteen minutes of each two-hour cycle.

EYE-CATCHING SALES APPEAL is making Du Pont DULUX the favorite top-coat finish of more and more furniture manufacturers. DULUX produces a rich sheen of lasting beauty that spells quality to the most exacting homeowner. Moreover, because one spray coat does the job of multiple coats of lower-solids finishes, DULUX can cut top-coat costs by 30%, application time by 50%.

WHETHER THE WEATHER blows hot or cold, these transformers are ready. They've just been sprayed with a coat of DULUX. Especially formulated to resist sudden temperature changes without blistering or cracking, this heavy-duty Du Pont enamel provides years of protection for all types of outdoor equipment. And its high resistance to hard knocks, staining and weathering cuts maintenance costs to a minimum.

**DEPEND ON DU PONT FOR BETTER FINISHES**

INDUSTRIAL PAINTS • LACQUERS • ENAMELS VARNISHES • THINNERS • STAINS • AND SPECIAL-PURPOSE FINISHES FOR AIRPLANES AUTOMOBILES • FURNITURE • HOME APPLIANCES • MARINE EQUIPMENT • RAILROAD EQUIPMENT • REFRIGERATORS • SIGNS TRACTORS • FARM EQUIPMENT • MAGNET WIRE • VEGETABLE CANS • OFFICE EQUIPMENT

DUCO AND DULUX ARE REG. U. S. PAT. OFF.

DU PONT

REG. U. S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING
. . . *THROUGH CHEMISTRY*

NEW PERIOD
Production Finishes
BAKING ENAMELS
LACQUERS SHELLAC
ENAMELS FILLERS
SEALERS SUPPLIES
PRIMERS STAINS
SYNTHETICS VARNISHES
Only
NEW PERIOD
PRODUCTION FINISHES
• Fillers and Stains
• Lacquers—Clear and Semi-Gloss
• Sealers
• Lacquer Enamels—Flat and Gloss
• Synthetic Enamels
Can Give You
All These Advantages
• Top Quality
• Superior Coverage
• Lasting Beauty
• Easy to Apply
• Greater Economy
Try New Period Production Finishes Yourself: Write for 5 gallon working sample at drum price.
MANUFACTURERS OF FINE WOOD AND METAL PRODUCTION FINISHES
NEW PERIOD
Production Finishes
NEW YORK WOODFINISHERS' Supply Co.
BROOKLYN, N. Y.

# Leather Artistry

by ARTHUR WILLIS

SHORTLY BEFORE the U. S. entered World War II the nucleus of a "revival", coupled with a trend toward lower priced leather-top tables to fit the purse of the average wage earner, began to manifest itself. Prior to this period gold-tooled leather pieces, largely custom furniture and special order jobs, were necessarily priced so high as to be reserved only for homes of the well-to-do.

The war stopped practically all new promotional activity in the furniture field for the duration. By 1944, government controls on essential materials forced curtailment of production, by the larger manufacturers, to a point below which it would have been unprofitable to operate at all. Hence allotment plans and allocation of established lines became a necessity.

### The War's Effect on Leather Top Industry

On the other hand the smaller manufacturer, specializing in one grouping such as occasional tables, had his own special problem to face. While reasonably assured of sufficient lumber to operate in his lim-

ited capacity, he found himself caught between government price controls on his units and sharply rising costs in materials and labor.

### Desire for Low Priced Gold Tooled Leather Tops

This situation gave new birth and impetus to the lower priced gold-tooled leather-top movement and, with the whole country waiting, the trend rapidly developed into a nation-wide runaway demand. However, complications entered at this point. Shortage of hides was one; but the chief trouble at this time was the overnight discovery of a shortage of experienced leather craftsmen, along with a dearth of "know how" among those in charge of production.

The writer was happy to be of some help in this situation through an "on the job" technical service to manufacturers covering all phases of leather work in its application to furniture. The program was elastic in design but concerned itself mainly with the setting up of a department for leather-top production and training of personnel.

The following data, which covers the newer accepted methods in leather top production, represents the writer's cumulative experience in the technical field on many projects during the past five years. In view of the embarrassment suffered in many furniture centers as a result of vast numbers of returns, due to checking, cracking and even scaling of the leather finish, special reference is made to the section dealing with the several methods of producing "old leather" effects, with reasonable assurance of permanence in the home.

**In this article details about the selection, treatment, laying, finishing and gold tooling of leather for leather-top desks and tables are explained by a Grand Rapids designer who has given a great deal of attention to this art and has installed leather-top departments in a number of furniture factories.**

### Place Leather Operations at End of Production Line

Turning to first things first in a brand new set-up, it has been the writer's custom to locate the leather room as near the shipping room as possible. In this production routing arrangement the leather operation is last. In other words, tables, desks, etc., come to the leather department ready to ship except for the leather work. In conveyorized factories the department is located at the end of the line. There is no back tracking of units.

Size of the space needed for leather top operations will depend on the contemplated output. In general it may be said that, for equal volume of output, the floor space for a leather department can be about one third of that required by any other department in the factory.

Bench equipment is simple, comprising the usual wall work benches and specially designed narrow horses (carpenter's trestles) to support

# HOW FIRM IS YOUR FOUNDATION?

For a finish you will be proud of, nothing is more important than the foundation over which it is applied . . . and here's where a dependable filler means everything. Reliance Fillers reduce easily and quickly with ordinary naphtha and have exceptional non-settling properties. They pad-in and wipe-off easily to give flush, completely filled pores. They dry quickly to a dense, non-porous surface that holds out the top coats, without bubbling, puffing or shrinkage. The colors are clear and permanent . . . no grayness in the pores. Just as every building requires a solid foundation, engineered to the specific needs, so should your filler be carefully chosen to fit your finishing room conditions. All we ask is a chance to survey your needs and help you build a firm foundation for your finish.

For additional information address 4732 Crittenden Dr., Louisville, Ky.

Rely on Reliance

RELIANCE VARNISH CO., INC.

AFFILIATED FACTORIES IN

LOUISVILLE, KY. CHICAGO, ILL. ROCKY HILL, CONN. ASHEVILLE, N. C.

the work. The reason for using narrow horses is so that workers can walk all around the tables and work without excessive reaching. There should be a large table for hide cutting, size about 8x10-ft. This allows for the entire hide to be surveyed by the cutter for bad scars and non-acceptable surface abrasions. With the whole hide before him, the cutter can maneuver his patterns around to miss these surface markings and, by using different sizes in the line, he can reduce wastage to a minimum. Leathers are cut about ⅜-in. oversize all round.

### Simple Tools Used in Fine Leather Work

Simple tools are the best in fine leather work. A good "boner" is made from a short stick of ¼-in. 3-ply wood covered at both ends with scrap leather. The best stretching block is made from a 2x4-in. piece cut about 6-in. long, with the edges and corners of one flat side rounded off and covered with leather, being sure the leather corners are carefully mitered and smoothed.

A good knife is a "must" for this work. There are many to choose from and, after trying them all, the writer prefers an ordinary upholsterer's knife with a small curve ground away in the blade about ¼-in. from the tip, as shown in the accompanying drawing. These knives have a hefty handle, comfortable to hold, and a rigid blade. Reference to these tools is made later in the laying operation.

In the final analysis, a hand-padded job to simulate an old leather effect on fine furniture, gives an excellent appearance. During recent peak years, however, a number of mechanical methods have been developed, using leather lacquers and spray guns in order to meet the high volume output necessarily demanded in the lower price field. Techniques that include the use of spray guns have been pretty well established by this time and, in the proper hands, they give more or less successful results.

A knife for cutting and trimming leather.

Judging by the large number of leather-top returns to manufacturers, due to checking, scaling and multiple cracking of the finish, either on the dealer's floor or in the home, it is evident that things do go wrong at times.

### Why Some Leather Finishes Crack

One of the chief causes of cracking is the use of too high a percentage of solids in the basic leather-lacquer color coat. Anything over 8% is almost certain to result in cracking down to the surface of the leather and up through the final finish. Another common cause of checking, in certain circumstances is the custom in some quarters of using a hand padding lacquer with color directly over the base spray color coat of leather lacquer, to produce an antique appearance. These finish materials are two distinct products and certain climates operate to induce entirely different expansion co-efficients, resulting in the trouble just mentioned.

The obvious remedy here is to *use the same finishing medium throughout all operations.* If it is

*Arthur Willis*

**Recognized Authority and Consultant on Leather Artistry and Finishing**

**RECOMMENDS**

# QUALASOLE

**AMERICA'S FINEST PADDING LACQUER**

**FROM**

**START TO FINISH**

**QUALATONE PRODUCTS INCORPORATED**

**21 GAY STREET, NEW YORK 14, N. Y.**

intended to combine hand padding over a spray shading operation to save time, there is no reason why the same lacquer, suitably reduced for spraying purposes by proper thinner, cannot be used as a vehicle for the base color coat. The writer introduced this method two years ago on a project calling for lower costs on a promotional group. Using a certain brand of high grade, quick-drying padding lacquer* as a medium, details of the technique follow:

### Preparing Leather and Applying First Coating

Assuming that we are dealing with neutral or russet leather pieces that are already cut to size and in a pile at the side of our spray booth, we make up a 60/40 mixture of padding lacquer and the lacquer manufacturer's recommended thinner (60% padding lacquer, 40% thinner). On the table in the spray booth, we rig an upright board to which the leathers can be pinned. We have an air gun handy to clean off each piece of leather before picking it up, as powder collects on the underside. After they have been sprayed the leathers may be hung vertically or laid flat, whichever is most convenient, as they dry within a few minutes.

### Spraying Shading Color to Produce Highlight Effects

The second operation is the shading of edges and near edges with a spray gun, leaving a highlight in the middle. This is done by rapid gun shading from the edge and feathering off toward the middle. The shading color to use will depend on the base color. If it is crimson or vermillion, then shade with Bismark brown for a suitable antique contrast. Do not spray color in the highlight, as this is best done in the short padding operation which follows.

The purpose of the final padding by hand is to soften the severe line produced by gun shading, and add character to the antiquing. This job requires an artistic sense; generally girls are the best workers for either complete hand padding or partial hand padding, as in the present technique. The technique simulates that of the old time french polisher. A pad is made from upholsterer's waste wadding covered with a couple of thicknesses of cheap cheesecloth. The pad should be about the size of a worker's hand.

### Technique of Using Padding Lacquer

Dampen the pad with padding lacquer, full strength from the can this time. Start with a circular motion at the lower left hand corner and proceed all around the edge of the leather at the shaded part. In other words, the pad is traveling in circles but going forward all the time—never backward. Light rings will appear at first but these will be broken up by the pad the next time around, and grain configurations will begin to appear. What really happens is that top grain markings, slightly raised by moisture in previous operations, present peaks on the surface; and the final padding, skimming the color from them, results in producing a fine old leather appearance.

*Name on request.

[TO PAGE 74]

*For Color Retention on Light Finishes —*

**CRYSTAL CLEAR**
**WATER WHITE**
**LACQUER**

• It's a time-tested material for preserving the original color of those beautiful grays, off whites, lime, pearl, ermine and all pale, bleached and decorative effects so popular on furniture of today.

**THE SCHAEFER VARNISH COMPANY**

*Incorporated*

15th and Magnolia
LOUISVILLE 10, KENTUCKY

*Use Schaefer's Crystal Clear Water White Lacquer*

### Upholsterer's Leather; Its Merits; Finishing Technique

For the past year or so, it has become the custom for many manufacturers to buy upholsterer's leather for table and desk tops. These hides come in all colors and, though higher in price per square foot than raw finishes, the additional cost is more than offset for two practical reasons. First, the hides for staining or dyeing are usually select, free from bad scars, careless shaver's nicks and surface abrasions. Sometimes these hides can be cut like ordinary fabric and the wastage is reduced to an absolute minimum.

Second, operations No.1 and No.2, as referred to previously, are entirely eliminated. The same old leather appearance is obtained by proceeding with operation No. 3, as outlined, simply by conveying dry color on the pad, using padding lacquer as the vehicle.

The colored hides just referred to are stained or dyed, and the pores are still open to receive new color or finishing material. These colored hides should not be confused with the hand-glazed type of hides which are covered with the processor's sealer. The hand-glazed sealed hide is a finished product and, if left alone, will give years of satisfactory service.. Any attempt to antique it with additional color and finishing material is definitely not recommended, for reasons already noted.

Laying leather tops is more or less routine but there are a few details to observe; otherwise you may have trouble. Small bumps on the surface of the leather may be caused by tiny pieces of grit embedded in the underside. These pieces of grit or foreign matter cannot be seen by the worker, but they can be felt by the hand. Before laying a piece of leather, brush the underside of the leather and the top of the table. Pass the hand over both of them afterward.

Scars are usually thin spots in the hide and when it is laid they sink down. If nothing is done about it, you will have the appearance of a deep depression in the leather, afterward. If these thin places are detected before laying, they can be built up on the underside with a bit of cotton, feathered at the edges and glued into place. This underlaying should be done before the leather is laid permanently, to be sure that the edges of the cotton are sufficiently feathered; otherwise, bumps may show up which will be difficult if not impossible to smooth out after the glue has set.

### Adhesives and the Technique of Using Them

There are a number of suitable adhesives from which to choose for leather laying—all of them good—depending upon the production routing arrangement. In the present case, units come to the department completely finished, hence we use water-soluble adhesives which do not mar the finish. Synthetic adhesives, some having a lacquer base, are excellent for panel assembly production. For purposes here, the writer is choosing two adhesives that have proved satisfactory.

Where the leather bed (that part of the wood top to be covered with leather) has been masked off during filling and finishing operations, or-

# *Announcing*

# REVELON
## POLISHES and COMPOUNDS

☆ To get the best out of your lacquers, varnish or urea formaldehydealkyd finish use our new development of REVELON polishes and compounds. . . . They are easy to apply by machine or hand and will leave the surface bright and clear with better mar resistance.

RO10 RUBBING OIL (For Lacquers)
RO20 RUBBING Oil (For Varnishes)

130 NATURAL FASTCUT POWDER
131 GRAY FASTCUT POWDER
132 BLACK FASTCUT POWDER
133 BROWN FASTCUT POWDER

136 NATURAL FASTCUT COMPOUND
137 GRAY FASTCUT COMPOUND
138 BLACK FASTCUT COMPOUND
139 BROWN FASTCUT COMPOUND

124 NATURAL POLISHING COMPOUND
125 GRAY POLISHING COMPOUND
126 BLACK POLISHING COMPOUND
127 BROWN POLISHING COMPOUND

134 REVELON CLEANER
W100 REVELON WAX POLISH
W110 REVELON POLISH (For Varnish or Lacquer)
W111 REVELON POLISH (Mahogany Colored)

☆ All Rubbing Oils in Drums.....90c gal., f.o.b. Lenior, N. C.
All Powders in Bbls., 100 lbs.....10c lb., f.o.b. Lenoir, N. C.
All Compounds in 5 Gal. Cans.....22c lb., f.o.b. Lenoir, N. C.
All Polishes in 5 Gal. Cans.....$2.30 gal., f.o.b. Lenoir, N. C.

**LENOIR WOOD FINISHING CO., Lenoir, N. C.**
**INDUSTRIAL CHEMICAL CO., Lenoir, N. C.**

***Manufacturers of high quality lacquers, sealers, stains, fillers and varnishes.***

The knife blade serves as a guide as well as a cutting tool. Two other tools appear at left.

dinary hide glue, thinned to about half the consistency required in the cabinet room, works well. In the lower price groupings, the masking operation, particularly on round tables, is time consuming and expensive. In such cases, Arabole GRB-5 is a safe adhesive to use on the finish around the edge of the leather bed, which occurs when the unit goes through the finishing operations unmasked. As a matter of fact, there is a great saving in operating costs here, in any price group—and it is safe.

Adhesives may be applied with a wide flat brush, but the writer prefers to use a wet cloth. This method enables the workman to work the glue well into the wood, and it can be wiped to a smooth even surface, avoiding dry spots which later would develop into blisters when the leather is laid. If the glue is brushed, be sure to smooth out any high ridges and brush marks; if the glue begins to set before leather application, ridges of excess glue may show through on the finished surface.

### Smoothing Down Cemented Leather; Trimming Edges

After the bed has been prepared with adhesive and smoothed over, the leather covering is laid immediately. While it is still loose but in in position, pass a large dry pad back and forth across the table to force out any air pockets. When the leather is laid. If the glue is sure on the pad will complete the

# "I'M DIFFERENT!"

## Certainly You Are, But to Date DeBURGH Finishing Systems Have Worked Production Wonders for Other Furniture Manufacturers Who Were Also "Different"!

More and more aggressive furniture men are realizing that a DeBURGH Finishing System is the "common denominator" of furniture finishing.

"Not sufficient volume" . . . "My floor plan is not right for conveyorization" . . . "I have too many different finishes" . . . "sizes and shapes of my products prevent conveyorization"—all sound, legitimate reasons for being "different."

But a DeBURGH Complete Finishing System will still accomplish savings in manpower and increases in production you've never dreamed possible.

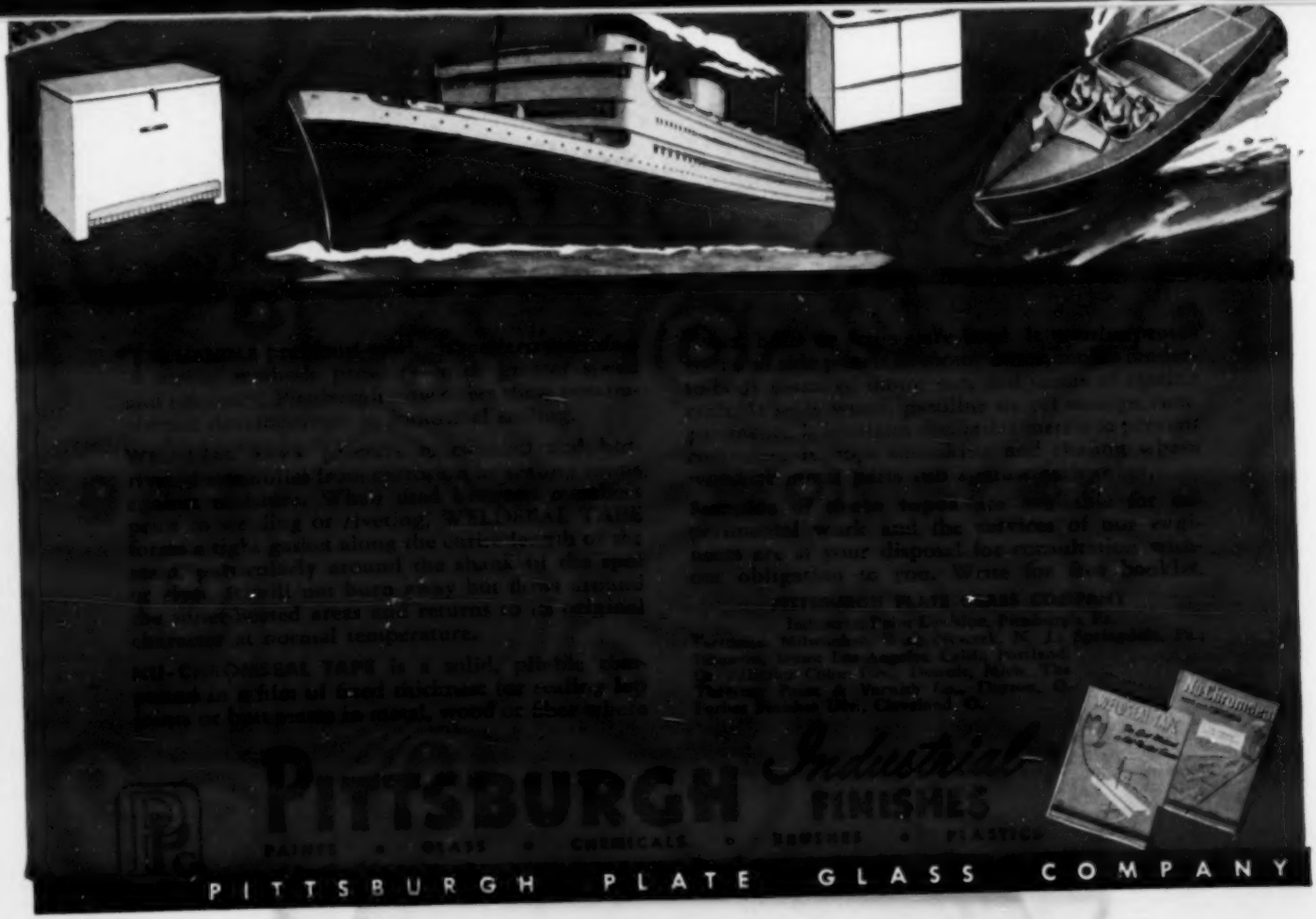
Let us prove that to you now!

***Phone, Wire or Write Today!***

# GEORGE KOCH SONS, INC.

**EVANSVILLE 4, INDIANA**

NOW... Pittsburgh offers
1. Weldseal Tape
2. Nu-Chromseal Tape
For better industrial sealing!


PITTSBURGH
Industrial
FINISHES
PAINTS • GLASS • CHEMICALS • BRUSHES • PLASTICS
PITTSBURGH PLATE GLASS COMPANY

adhesion. The stretching block is now used with considerable pressure over the entire table top to flatten out any high spots. Finally, a corner of the "boner" is run around the inside of the edge veneer to mark the cutting line. The leather block and boning stick are shown in one of the accompanying pictures.

Trimming the leather into the bed is a comparatively simple operation when the knife referred to is used. The knife point is as sharp as the rest of the blade but it merely acts as a guide by resting against the edge veneer. Actual cutting is done by the heel of the small curve, by pulling the excess strip against it as shown. The remaining finished edge is then rubbed even with the top veneer, using a wet cloth and the "boner" tool. After the remaining traces of glue are cleaned off the leather and the wood, the leather top is ready for tooling.

### Tooling and Applying Gold Ornamentation

For best results the tooling operation should be done within an hour after the leather has been laid, that is, while the leather is still soft. Gold that lies flat on the surface is dull, lifeless and lacks the brilliance and character of fine deep work. The most comfortable stance for the workman is shown in the photograph. With the tooling iron stick resting on his shoulder, both of his hands are free to guide and press hard on the roller die.

Correct temperature of the die depends on the type of gold leaf used. Several makes are available, all of them good in their respective fields. Some foils have a high heat release; others have a low heat release. For best results, this information should be obtained from the manufacturer. When the die is too hot on a low-heat release foil, it cooks the adhesive and, the gold

Skilled worker applying gold ornamentation.

mixing with it, results in a smeary job with complete absence of luster. Rheostats are available with several settings and auxiliary shunts, which provide for evenly controlled heat to allow the tooler to operate without interruption.

The writer has found Coe gold to react well to low temperatures

## Tack-Off Dust, Grit and Lint with a "DUST-ALL" Tack Rag before finishing

Specks of dust, grit and lint accumulating on surfaces to be finished, cause blisters and blemishes when painted over. For only a few pennies per job, your finishing department provided with "Dust-All" Tack Rags to wipe off, collect and hold this objectionable matter, can be assured of fine finish jobs.

Ask for further information on "Dust-All" Tack Rags for industrial use and for a sample.

*Be sure to get the Tack Rag that comes in the Red Checkered Bag.*

**HARDING**
*Manufacturing Co*
10620 Gratiot Ave., Detroit 13, Mich.

# *For Shading and Padding Leather*

**Complete line of Aniline and dry colors.**

**Color cards sent on request!**

## H. BEHLEN & BRO. INC.

**10 CHRISTOPHER ST.** **NEW YORK 14, N. Y.**

***Pacific Branch—1749 Berkeley St., Santa Monica, Cal.***

resulting in full gold registration of good body and a deep color. This is a 24-carat gold.

Blind tooling can be done at any time, but before the gold operation is started the table top should be gone over with a light padding of padding lacquer to clean it up and also to provide an additional adhesive for the gold. When this is done the tooler is less likely to have bare places or thin spots in the design. Very small bare places may be filled in with an artist's brush, using bronze powder, but in the case of large areas the touching up is too apparent and it is best to remove the whole section with No. 3/0 steelwool and re-tool.

### Sealer or Top Coat Serves as Protection

The final operation—sealing the work—is probably the most important of all, in view of what has already been said regarding leather finishes. Unlike wood, with its microscopic variations, we are dealing with a flexible material that is capable of extreme differences in expansion, depending upon its final location. Consequently, the less finishing material we pile on it the better. The preceding technique, with the medium referred to used sparingly, was designed with this fact in mind.

With the leather pores open at all times, the finishing material used forms part of the leather itself, rather than being just a film of coating material over it. As a result there is still a leather surface remaining to receive the sealer. The sealer should have a maximum of flexibility besides fulfilling the purpose intended, namely protecting the leather surface against reasonable wear and tear, against modern cleaning materials, and finally against minor accidents which occur in the average home, such as spillage of hot liquids and maybe alcoholic beverages.

The writer has found a certain brand of excellent padding lacquer that meets all of these requirements. Although not primarily designed as a sealer, it serves as a very good sealer for leather. It may be brushed or sprayed. It has splendid rubbing and polishing qualities and while extremely flexible, it dries with a hardness that resists press markings, average heat, water, and 120-proof alcohol —and it does not scratch white.

In conclusion, the writer realizes that a great deal of space has been given to fundamentals in this article. Possibly it has been boring to experienced craftsmen. However, it is hoped the data will find a place with newcomers in this field, both manufacturers and workers, and help in some measure to offset some of the headaches that still prevail in the leather-top industry.

---

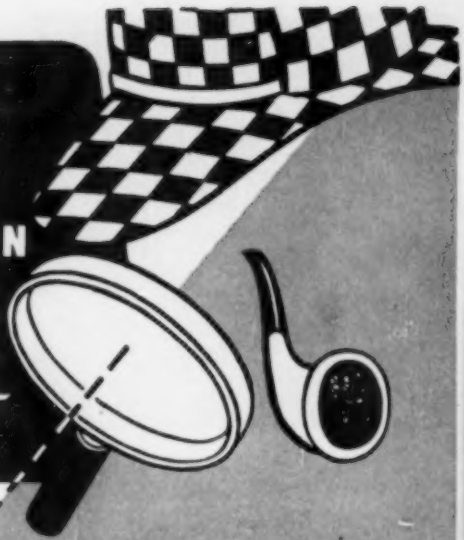
### *Infra-Red Representatives for Eleven Western States*

The Currier Co., with main offices at 205 12th St., Oakland, Calif., is now representing The Fostoria Pressed Steel Corp. on Infra-red Evenray equipment in the eleven far western states, as well as in Alaska and Hawaii. Farnsworth Currier is president and general manager, and W. A. Vensel is Vice President and Los Angeles division manager. Sales engineering offices are located at Oakland, Los Angeles, Olympia, Spokane, Salt Lake City, Denver and Phoenix.

The Infra-red process was introduced industrially about eleven years ago, and has been proven an acceptable method for baking, drying, dehydrating, preheating and degreasing, as well as many miscellaneous heating operations.

# *Check*

## THESE PERFECTION ADVANTAGES *for Yourself*



- ✔ **FULL RANGE OF SHEENS** . . . from dead flat to gloss
- ✔ **NO DULLING OR CLOUDY FLATTENING AGENTS** added
- ✔ **A BEAUTIFUL RUBBED EFFECT** . . . will rub clean and clear
- ✔ **WILL EITHER AIR OR FORCE DRY**
- ✔ **OUR SUPERIOR PROCESS IN CHEMICALLY TREATING RESINS DEVELOPS A FINISH SO SMOOTH . . . YOU CAN FEEL THE DIFFERENCE**

**4 TYPES OF SYNTHETIC FLAT FINISHES TO CONFORM TO YOUR NEEDS . . . POCKETBOOK . . . DRYING SCHEDULE**

1. **PERLAC SATIN FINISH** . . . out of the dust in 5 to 7 minutes . . . one coat looks and rubs like two coats of lacquer . . . liquor proof . . . water proof . . . won't haze or sweat back.
2. **PERFEX SATIN FINISH** . . . quick set . . . quick dry . . . water proof . . . liquor proof . . . full smooth body . . . won't haze or sweat back.
3. **PERFECTION SYNTHETIC FLAT FINISH** . . . water proof . . . liquor proof . . . beautiful rubbed effect.
4. **PERFECTION QUICK DRY FLAT VARNISH** . . . beautiful, rubbed effect, or rubs well . . . smooth.

**PERFECTION PAINT AND COLOR CO.**
**715 E. Maryland St.**
**INDIANAPOLIS 2**
**INDIANA**

## Strip-off Coatings

Can you give us the names of the manufacturers of strip coating or spray booth coating?—*H.M.P.Co.*

---

In a letter we are naming several materials and the manufacturers.

---

## Silk Screen Process

We are interested in getting information on metal etching by the silk screen process, in connection with applying this process to the making of etched metal name plates.

Could you supply us with any sources of information, such as text books or catalogs, which would give us the necessary information we need to manufacture name plates by this process?—*L. A. Inc.*

---

In a letter we are naming several concerns who sell materials and supplies for silk-screen work.—*Ed.*

---

## Preserving Light Finishes

We will appreciate it if you could supply us with two sets of tear sheets designated as pages 72 and 74 from April 1950 issue of *Industrial Finishing* that includes an article written by Rollan H. Wampler, entitled, "Preserving Light Colors in Wood Finishes". —*J.R.A.*

---

Tear sheets have been sent.—*Ed.*

---

## Tinted Finish for Plastic

We are trying to obtain a permanent, transparent, bright green dye that can be combined with lacquers or other vehicles for decoration of an illuminated sign, to be used on a molded acrylic surface. We would appreciate whatever information you can give us regarding the source of such material.

At the present time we are using a product that gives good results, but it is not sunfast; when the sign is displayed in direct or reflected sunlight, the green portions have faded to a yellowish brown.—*P. Co.*

---

Who can supply what this company wants? In a letter to them we have named two concerns, but are not sure whether the products will meet these requirements.—*Ed.*

---

## Primer for Galvanized Iron

In the April 1950 issue, on page 80, we notice an inquiry from the B. Sign Co. asking about a material for priming galvanized iron to be used in signs.

We are currently supplying our Stantite Spraying Primer to sign companies for just this type of work and it is producing excellent results. No particular preparation is required other than to have the galvanized iron surface reasonably clean before priming.—*The Stanley Chemical Co.*

---

On page 80 of April issue, you wrote one of your readers regarding a primer material to be used over

# Enamels • Undercoats

**LACQUERS • SEALERS**

**SHELLAC • FILLERS**

**STAINS • GLAZES**

**SPECIALTY FINISHES**

*FOR APPLICATION BY ALL METHODS*

Fine Enamels and Undercoats made in all types. Air drying or baking. For wood or metal. Spray, dip, roller-coat, screenprint, squeegee or brush application.

*Industrial Finishes in Step with the Times*

**JAMES B. DAY & CO.**

CHICAGO 14

galvanized metal before painting. In applying paint on our galvanized wire cloth we occasionally get into specifications where a tightly adhering coating is necessary. Accordingly, would you be good enough to forward us the names of the companies making Galvaprep and other products of this application?—*Reynolds Wire Co.*

---

Information supplied.—*Ed.*

---

## Electrostatic Spraying

In one of your recent issues you refer to the advances made in the field of electrostatic spraying of lacquers. We have a problem in the varnishing of our woven wire cloth, in that, at present, we equip our drying ovens with a dip and a beater movement to clear the mesh of surplus lacquer. We would like to have some information as to the advisability of using an electrostatic method in lieu of our system of beaters. Our wire cloth travels through the ovens at a varying rate of 5-ft. to 50-ft. per minute.

Any information you can provide and also names of suppliers of the necessary Electronic equipment would be much appreciated.—*Cyclone Co. of Australia, Ltd.*

---

Your letter has been forwarded to our good friends, Ransburg Electro-Coating Corp. of this city. Harold Ransburg will contact you by mail. We have heard that they are now developing a new process which should be applicable to your product.—*Ed.*

---

## Tumbling; Gel Lacquer

May we have a reprint of "The Technique of Finishing Small Wood Turnings by Tumbling"?

Also, we'd like to get in touch with S.H. Sharpless, mentioned on page 80 of the April *Industrial Finishing*. Our product is model airplane gas-engine propellers, which we now finish by dipping in sealer and lacquer.—*A.H.S.*

---

Reprints and information sent.—*Ed.*

---

## End-over-end Tumbler

Would you be kind enough to have the manufacturer of the end-over-end tumbler for drums of material, as illustrated in April issue of *Industrial Finishing*, on page 100, send the writer any literature he may have describing this device? Also, price, delivery, etc.?—*M.B.S.*

---

It's the Vol-U-Meter Co., Buffalo 16, N.Y. Same picture appears in the manufacturer's ½-page ad on page 6 of that same issue. It's profitable to read the advertising pages of I.F.

---

## Paint for Patterns

We wish to obtain a paint for use on wood patterns which would be an improvement over the pyroxylin pattern lacquer we now use. We want a pattern paint possessing high wear resistance, excellent resistance to moulding-sand abrasion and having good adhesion to the wood base on which it is applied. We understand that there are several brands of such paints of the plastic type available and would like to have the names of manufacturers.—*G.W.*

---

In a letter we are naming several concerns who, we believe, can supply what you need.—*Ed.*

---

## Recording Viscometer

Any data or reference you can give pertaining to the "Recording Viscometer", referred to on page 122 of

# A Quarter of a Century

**Twenty-five years of original development work, engineering, design, manufacturing and installation of furniture plant conveyor systems represents an important contribution to the profitable operation of the industry. Balsa is proud to publish a few excerpts from the many letters which it has received from furniture manufacturers in all parts of the country.**

★ ★

"The new modern production layout you prepared for us, and your conveyorized setup, complete from cabinet room through all finishing operations, including rubbing, wrapping, and transportation to our warehouse, etc., has been in operation six months . . . It has made available for other purposes, floor space that we formerly had to use for two finishing rooms . . . We are taking care of our production easily with reduced personnel . . . It gives a more uniform finish, reduces repairs and fire hazards."—KARL J. ZOERCHER, *President,* Tell City Chair Co., Tell City, Indiana.

★ ★

"Our conveyor system, which you installed, has been operating about six months. With the conveyorization of our finishing department we are able to get over twice as much production without increasing the number of man hours, thereby resulting in a considerable decrease in our unit cost.

"Our employees are as enthusiastic as we about the operation of the conveyor . . . There is no question that your equipment is a boon to the furniture manufacturing industry."
—SAMUEL DIENGOTT, *President,* National Chair Co., Whitman, Mass.

***Development Engineers and Designers of Original Furniture Conveyor Installations***

# BALSA, Inc.

**122 EAST 42ND ST., NEW YORK, N. Y.**

April 1950 issue of *Industrial Finishing*, will be appreciated. We are concerned about this and would like to have your prompt attention.—*H.H.Co.*

---

A product of Brookfield Engineering Laboratories, Stoughton, Mass.

---

## Mirrodip Electrodizing

In the April issue of this magazine, on page 4, you mention the Mirrodip Electrodizing process. Will you please send us the name and address of the manufacturer of this process.—*A. F.*

. . . Please inform us where we can get full information in regard to the alloys used and equipment for this work.—*O. C. Mfg. Co.*

. . . . Will you please tell us where we can find out more about this Mirrodip process?—*C. Corp.*

---

It's Technical Process Division of Colonial Alloys Co., Philadelphia 29, Penna.—*Ed.*

---

## To Finish Aluminum Castings

Recently I talked to a customer of ours who is anticipating finishing aluminum castings in the near future. I am sorry to say that I have mislaid our copy of the issue which included an excellent article on the bubble trouble experienced in finishing such castings, therefore I would appreciate your forwarding either a reprint of the article or another copy of the magazine which carried the story.—*F.J.K.*

---

We have published several articles about finishing castings to prevent blistering, etc. One feature article on this subject appeared in October 1946 issue, and another one in December 1942 issue. We are sending you copies of these two issues. Also tear sheets of some questions and answers on the subject.

The demand for complete copies and tear sheets of *Industrial Finishing* is so great that our supply of office copies is soon exhausted.—*Ed.*

---

## Back Copies of I.F. Offered

In looking over some old papers I came across a number of copies of *Industrial Finishing*. I have noticed some letters from readers asking for old copies. If you want any of them please let me know. My old copies are as follows:

1931—May and June.
1932—Nov. and Dec.
1933—Full year
1934—Full year
1935—Full year
1936—Full year
1937—Jan., Feb., March, April, May, June, July, Sept., Oct. and Dec.

—George Holtgrewe, 8746 Oriole Ave., St. Louis 15, Mo.

---

## Bonderizing; Alodizing

Would you please forward the address of the manufacturers of Bonderite and the chemical wash known as Alodized? These trade names were taken from an article in a recent issue of *Industrial Finishing*.—*A. P. Co.*

---

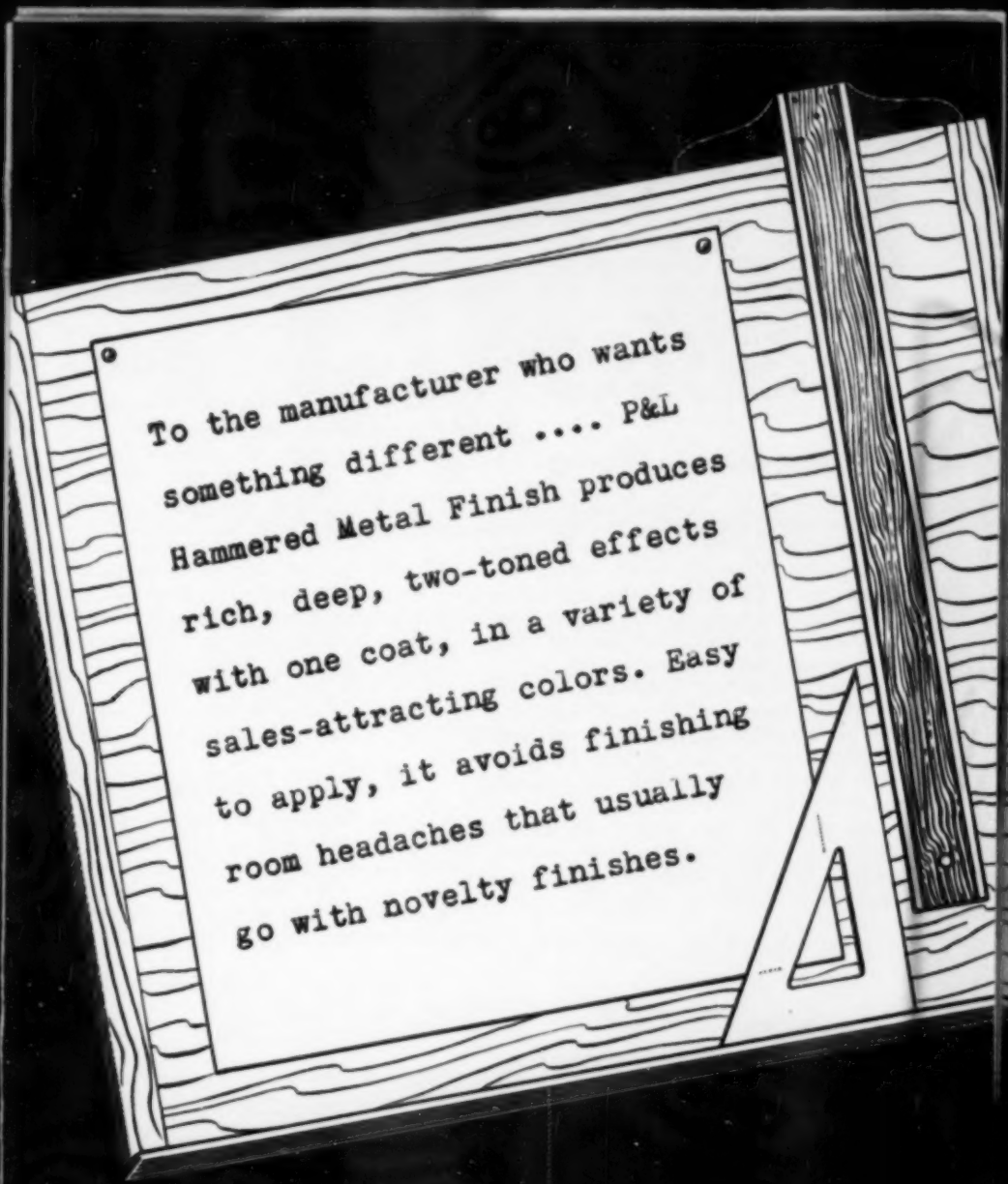
The chemical treatment called "Bonderizing" is a product of Parker Rust Proof Co., 2176 E. Milwaukee Ave., Detroit 11, Mich.

The chemical treatment known as "Alodizing" is a product of American Chemical Paint Co., Ambler, Penna.

---

## Automatic Dipping Machine

We have on hand, an automatic dip-lacquering and drying machine suitable for 15,000 pieces in eight hours—of compacts, cigarette cases; comb, brush and mirror sets, and various types of jewelry. Good also for


To the manufacturer who wants
something different .... P&L
Hammered Metal Finish produces
rich, deep, two-toned effects
with one coat, in a variety of
sales-attracting colors. Easy
to apply, it avoids finishing
room headaches that usually
go with novelty finishes.

PRATT & LAMBERT-INC.
*Industrial Finishes*
NEW YORK BUFFALO CHICAGO
FORT ERIE, ONT.

small hardware, bag and purse frames, etc.

This is new and of the latest type construction. The oven can give a heat range up to 350° F. for 30 minutes. This is a custom-made machine but our customer cannot accept delivery at this time. Do you know of anyone who might be interested?—*Charles W. Hardy & Son.*

## Suggestion on Waxing

In the April issue, Letters from Readers, page 78, "Ideal" requested information on Tumbling and Waxing operations for small wood parts. We have been furnishing the furniture manufacturers of North Carolina a material that seals and permanently lubricates wooden drawers, all in one simple operation. Inasmuch as this material enhances all wood surfaces by a wax-like appearance, it may offer "Ideal" a simple and inexpensive means for waxing their small wood parts.

In view of this, would you kindly favor us with the name and address of the firm that requested the information?—*Old-North Mfg. Co.*

Information given.—*Ed.*

## School for Finishers

In October 1947 issue of this magazine, on page 108, the Finishine Laboratories, Inc., of Syracuse, N.Y., advertise a free school for finishers. We are wondering whether you could tell us of any additional companies who offer this same service, or whether you could supply us with any information as to what schools offer a course of this nature that would be suitable for a small production furniture manufacturing plant.

We are looking for answers on low-cost furniture finishing and would appreciate anything that you could recommend along these lines.—*W. & Co.*

At the moment we do not recall of any other concerns that offer a School for Furniture Finishers.—*Ed.*

## We Have Flock Adhesives

We refer to a letter from one of I.F.'s readers on page 92 of May 1950 issue. This item is entitled, "Adhesives for Flock", and the writer is interested in receiving names of suppliers of this material.

We would like to get the name and address of this firm, inasmuch as we manufacture this material and meet all the requirements of the specifications mentioned in the letter.—*Lacquer Corp. of America.*

Name and address supplied.—*Ed.*

## We Have Touch-up Kits

In the April issue, page 76, we find an inqury for a Touch-up Kit to be used for repairing scratches on cabinets, etc. We have such a kit and would be glad to be put in touch with the inquirer.—*H. Behlen & Bro., Inc.*

Yours is one of the names that we gave in our reply.—*Ed.*

## *Platt Represents Ferro Enamel in Eastern Pennsylvania*

Ferro Enamel Corporation, Cleveland, Ohio, announces the appointment of Harry M. Platt, 2045 Pennsylvania Ave., Allentown, Penna., as Industrial Oven and Dryer Sales Representative in Eastern Pennsylvania. His duties will include the sale of ovens, dryers, metal cleaning machines and complete synthetic finishing departments.

Mr. Platt is a graduate Mechanical Engineer from the University of Pennsylvania. He was formerly associated with public utility companies in the Philadelphia area as an Industrial Engineer. For four years he was Sales Manager of an industrial gas division.

# FLOCK

**Short-cut fibres of all types used to produce effects of suede, felt, velvet, mohair, velour, carpet on any surface in an economical manner.**

Let our 25 years experience
be your guide to quality
results at lowest possible cost.

*Rayon Processing Co. of R. I., Inc.*

**PIONEER PRODUCERS OF SURFACE COATING FLOCKS**

**55 MOSHASSUCK STREET** **PAWTUCKET, R. I.**

**POLLAK PAINT CO.**
715 Main St.
Buffalo, N. Y.

**LAMBERT-NEW ENGLAND CO.**
79 Sudbury St.
Boston, Mass.

**H. R. MEININGER CO.**
409 16th St.
Denver, Colo.

**J. GORDON SMITH CO.**
3901 Main St.
Dallas, Texas

## To Stir Paint in Big Tank

Referring to N.S.Co.'s question under the above title, published on page 98 of May issue, from the description of the tanks I assume that they were designed for dipping considerable numbers of small parts hung on racks. Otherwise, there would be no justification for the proportion of 42½-sq.ft. of surface area to only 1½-ft. of depth. Large pieces could not be dipped and drained properly in the tank you describe.

Proper dipping tank design keeps surface area to a minimum, reducing both the area from which solvents escape and the bottom area which must be stirred. While pigments are still in some state of suspension they are quite easy to disperse evenly again. Once settled on the bottom, the problem becomes more difficult. Increasing the tank depth prolongs the time that it takes for the pigment to reach bottom, which drop can be counteracted by mechanical agitation and by the dipping process itself.

The method of installing a horizontal enclosed agitator, which you suggest, might work. However, due to the length of the tank, I believe that you would need two, placing them on diagonally opposite corners of the tank. The propellers should push the liquid toward the far end of the tank and should not be over 6-in. in diameter. Preferably, they should be driven by air motors, in order that their speed may be regulated. This is important because excessive turbulence is difficult to control in shallow tanks.

A better method would be to keep the material agitated by means of a pump. Two outlets for 2-in. or 3-in. pipe are made in the back of the tank. One is placed at the lower right-hand corner and the other just below the lowest liquid line at the left-hand corner. Pipe connections are made and a pump is installed in the circuit. The pump must be of the impellor type, which will not stall and which will pass small particles through. Gear pumps or those that would be damaged by paint cannot be used.

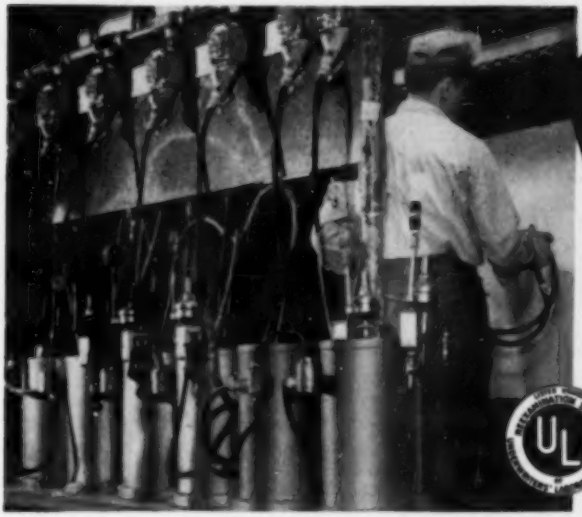
The pump should pull the liquid from the lower outlet and discharge it at the top. This creates a swirling action which reaches every part of the tank and does not churn any air into the material. I have found this method quite successful in keeping zinc chromate primer in solution, even though reduced 200%.

Here is one more suggestion that may help you: Your materials can have certain ingredients incorporated into them which will retard settling and which will keep the sediment soft —not a hard mass. Your supplier will probably be glad to formulate your paints with a view toward minimizing their deterioration in the tank.— *George A. Conrad.*

---

## What Are NGR Stains?

I would appreciate some information about non-grain-raising stains. It isn't clear as to what constitutes a non-grain-raising stain. Spirit or alcohol stain is non-grain-raising as compared to water stains. Also oil



# HOT SPRAY ...a proved and practical success!

# ...with BEDE PAINT HEATERS!

***WHY BEDE PAINT HEATERS LEAD THE FIELD!***

- **FIRST AND ONLY** Paint Heaters tested and passed by Underwriters!
- **FIRST AND ONLY** Paint Heaters using aluminum as the heat transfer agent!
- **FIRST AND ONLY** Circulating Paint Heaters which can draw paint directly from any paint container *without a pressure tank!*
- **RECOMMENDED BY** LEADING PAINT MANUFACTURERS.

**WRITE . . . For your FREE copy of "The Hot Spray Process" by James A. Bede**

## REVOLUTIONARY NEW PROCESS CAN BE USED IN YOUR FINISHING OPERATION

**Bede Paint Heaters—the most modern and advanced in design—make hot spray a practical, profitable method for use in your plant. Manufacturers from coast to coast have tested and tried Bede Paint Heaters—and *proved* their advantages for hundreds of different products and finishes.**

**With Bede Paint Heaters you can slash your finishing costs, step up your spray booth production, get higher quality finishes! One coat often takes the place of two—and most plants report a phenomenal drop in rejects and reworks.**

**Bede Paint Heaters have been tested by Underwriters' Laboratories and proved *completely explosion-proof.* Aluminum is used as the heat-transfer agent—eliminating troublesome heat-transfer liquids. Bede Paint Heaters are available in circulating and non-circulating models.**

***WRITE TODAY FOR COMPLETE INFORMATION AND FREE TRIAL OFFER***

**BEDE PRODUCTS Inc.**

*INDUSTRIAL FINISHING SPECIALTIES*

**4311 RIDGE ROAD • CLEVELAND 9, OHIO**

stains are non-grain-raising. Some authorities on finishing refer to a stain powder dissolved in warm water to which alcohol is added, as an NGR. A reply clarifying these matters will be appreciated.—*E.W.T.*

---

A non-grain-raising stain may be defined as a solution of light-fast dyes (usually the so-called acid types) in non-aqueous solvents (containing no water). These solvents consist of slow-drying fixatives such as glycols or their derivatives, together with fast-evaporating solvents such as methanol, ethanol and others, and hydrocarbons such a toluene.

Spirit stains are more or less non-grain-raising, but the dyes used in spirit stains are fugitive (liable to fade).

Penetrating oil stains are non-grain-raising, but the dyes used in such stains are fugitive, and they also bleed (sometimes discolor top coats).

Pigment wiping stains also do not raise the grain, but they depend largely upon pigments for their staining action.

Stain powders dissolved in hot water and reduced with alcohols are more or less non-grain-raising in their action, but they cannot be properly called NGR stains because of the presence of water.—*Rollin H. Wampler.*

---

## Limed Oak Finish

Recently we have been having trouble with the grain raising on our limed oak finish of rift oak veneer. This condition appears two or three months after the furniture has been finished. Our finishing procedure at the present time, for limed oak, is as follows:

1) Bleach out mineral stains.
2) Seal and sand.
3) Fill and let dry for 24 hours.
4) Sap shade.
5) One coat of sealer and sand. Allow to dry four hours.
6) One coat of lacquer. Allow to dry four hours.
7) Second coat of lacquer. Let dry overnight.
8) Third coat of lacquer on tops only. Allow to dry 24 hours.
9) Final finish with well known rubbing compound and pumice stone. Final finish with well known wax.

We would appreciate any information which you could give us with regard to the best procedure to use in finishing limed oak so that the grain will not raise after it has been exposed to the natural daylight and ordinary temperature.—*G. Furn. Co.*

---

The apparent grain-raising of your limed oak is probably due to one of two causes. The first would be excessive moisture in the wood at the time of finishing. Moisture content of the wood should not be over 6% to 10%.

The other cause would be shrinkage of the finish. This is caused by residual solvents evaporating from the film after it is rubbed. It usually shows up about a week after rubbing. The best way to eliminate this trouble is to allow the final coat of lacquer to dry two or three days before rubbing, when most of the residual solvents have left the film. If the time element is important, then force-dry the finish about 18 to 24 hours at 100° to 115°F. —*Rollin H. Wampler.*

---

You seem to be doing everything that is general practice in finishing oak in a limed finish. Perhaps the wood or veneer was wetter than usual when finished. This might happen if, in the bleaching operation, the wood was soaked too much and finished too soon after bleaching. If the mineral streaks were spot bleached, this would not be the case.

You seldom get veneers today that

# SAND BY AIR

## IN STRAIGHT LINES WITH THE SUNDSTRAND OPPOSED PAD SANDER

**and Get a Better Job Faster**

This is the sander you'll want for production or maintenance work on wood, metal, plastic or composition. It's a sturdy air operated machine—easy to handle because of vibration-free action.

You'll effect savings between 50% to 70% on production sanding—wet or dry.

Pads of this outstanding sander reciprocate in a straight line and in opposite directions—grain structure can be followed easily, producing finer final finish. Ask for a demonstration of a Sundstrand in your plant before buying any portable sanding equipment. There's no obligation.

**FREE DATA**

If your work includes sanding of wood, metal or composition on production or maintenance work, write for free complete bulletins. Ask for bulletin IF-54

**SUNDSTRAND MACHINE TOOL CO.**

PNEUMATIC MACHINE DIVISION

ROCKFORD, ILLINOIS, U.S.A.

# QUALITY!

*". . . and best of all we have improved the quality of our product."*

Those words written in praise of the DE BURGH FINISHING SYSTEM have been repeated often in letters from a rapidly growing list of enthusiastic users.

Many, in praising labor and space saving features, have expressed their pleasure in improved quality of finish without change of formula or materials.

"Quality" is a word well applied to the DE BURGH FINISHING SYSTEM.

Designed by a FURNITURE MAN for FURNITURE MEN it is the "Quality" product at lowest cost that will save the most money and give best efficiency in your finishing room.

Prove this to yourself — NOW!

*Investigate!*

**DeBurgh Conveyors**

Patented and Patents Pending

*For Assembly, Finishing and Upholstery*

1741 K St., N. W., Washington 6, D. C.

ESTIMABLE

Finishes that are worthy of esteem originate in our Creative Studio. Small wonder why, for our artists are experts in developing finishes of distinction . . . finishes that emphasize to the fullest the salient features of all kinds of products.

If you feel your product needs a sales lift with a newer finish, be sure to contact our Creative Studio. A sample finish supplied to reputable firms at no cost or obligation.

*No Tampering with Quality*

ROCKFORD VARNISH *Company*
ROCKFORD ILLINOIS
*Manufacturers of Protective and Decorative Coatings*

*Affiliate*
GORDON BARTELS CO.
Roller Coating Specialists

are beyond the maximum moisture allowance for good finishing.

This condition is hardly possible after the finish is complete—if all operations of finishing are given proper drying time, and you seem to be doing that. Perhaps you received a poor lot of veneer and the condition is not grain raising but some other condition.—*Ed Hogstrom.*

## Blond Finish on Oak

We have recently seen a number of modern finishes on furniture, featuring various types of blond finishes on oak. We want to know how a white filler can be used to stand out for any open grain wood finish without discoloration of any stain with which it is being used.

We do not have reference to the ordinary paste wood filler in its ordinary natural stage, but would like to find out how to obtain the above finishes, and also where we might possibly obtain such a white filler.

We have tried filling first, then staining and wiping, but found the stain to color the wood filler, which is not the effect desired. Then we have stained and filled, but found that this was not successful either.—*H.M.Co.*

---

The problem of making a white filler stand out in contrast to the background on oak wood is not difficult to solve. If stains are used, be sure to use only dye-type stains such as water stain and non-grain-raising stain. Never use pigment wiping stains with white filler. After staining, wash coat with shellac or lacquer sealer at 5% to 10% solids. Sand this wash coat lightly and then fill with the white filler. Apply a thin coat of sealer; when dry, sand the surface and then finish with lacquer.

For some of the newer finishes, finishers use toners instead of stains to obtain the background colors. These toners can be made by thinning the proper color of lacquer enamel with about eight or ten times its volume of lacquer thinner. Fog this toner on lightly—not enough to cover the wood solid but just enough to get the translucent color in the background. Then fill and finish with lacquer sealer and lacquer.—*Rollin H. Wampler.*

---

I suggest the following method for a light finish on oak to hold the pores white, or any other color in contrast to the overall color of the piece:

1) Spray one coat of blond lacquer toner overall. Allow this coating time to dry. Or, brush on one coat of blond pigment stain over all and wipe clean. Let dry.

2) Spray a wash coat of lacquer sealer. Let surface dry.

3) Sand lightly and brush on wood filler reduced to brushing consistency. (White or colors). Wipe clean and let dry.

4) Spray one coat of lacquer sealer. Let dry and sand surface with fine sandpaper.

5) Spray two coats of clear lacquer of any desired sheen. When dry this can be rubbed.—*Ed Hogstrom.*

## Aged Pine and Maple

I am manufacturing a line of authentic reproductions and I am interested in learning of any production methods for the "aging" of pine and maple used in furniture.

I would also appreciate any information as to manufacturers who might be in a position to furnish materials for such a process.—*F.W.H.*

---

In my own experience, this is usually done with stains. Of course, the stains must be applied very light in color, to simulate natural aging of wood. A water or NGR stain of a greyish-brown tone is usually satisfactory. This must be applied very

lightly. In fact, it is hardly possible to apply too little. In addition, the stain must be very weak.

Another method is to use a very weak pigment wiping stain or glaze of a greyish-brown tone. First coat the wood lightly with a thin wash coat of shellac or lacquer sealer at 5% to 10% solids. Apply the glaze or pigment stain over this and wipe clean. Then follow with lacquer sealer and lacquer.—*Rollin H. Wampler.*

1) Either an NGR stain is sprayed on, but not too evenly, or a pigment wiping stain is brushed on and wiped clean. After drying, the edges are steelwooled lightly to remove some color; also, at other points the piece is high-lighted in the same way.

2) A coat of sealer with a slight cast toward a neutral brown shade is sprayed on, allowed to dry and then the surface is sanded.

3) At this point the piece is "aged".

---

Really the authentic reproduction of antique and colonial furniture, and old French and English pieces is an art. Old pieces do not have a high bright color and seldom have a highly polished finish either. The colors are subdued.

In old maple pieces the color does not show as one shade but is strong in parts and light in others. The wood is not perfectly smooth and level, but shows variations here and there to give that hand finished appearance. Also here and there are a few nicks and dents. These are not sharp as if they had just been made, but rather as if they had occurred years ago and had been polished and rubbed over the years.

Of the antique finishes that I have seen produced, here is one way it is done.

**Easy's** the electric finisher with genuine reciprocation action. Duplicates the craftsman's natural back-and-forth motion of hand block sanding and rubbing.

STRAIGHT-LINE action sands up to moldings. Does not sand cross grain, cut swirls, eye winkers or other hard to cover abrasive patterns. NO HAND CLEAN UP WHEN YOU USE AN EASY.

**NEW MODEL DF:**

- FASTER CUTTING
- POSITIVE DRIVE
- VELVET SMOOTHNESS and a host of other new features.

**Plus** EASY'S REPUTATION FOR TROUBLE-FREE LOW COST MAINTENANCE

*Call your jobber or dealer or write for bulletin.*

DETROIT SURFACING MACHINE COMPANY

7434 W. DAVISON • DETROIT 4, MICH.

A few steel ballbearings ½-in. in diameter are dropped on the top—not enough to leave large dents but just enough to change the smooth appearance of the top. Here and there the edge is tapped with something sharp, then sanded smooth and some of the original stain is rubbed in. If there is an authentic piece of work available the antiquing can be copied from it; then the surface is shaded at various places to duplicate the real piece.

4) After all of the high lighting is complete a light coat of clear gloss lacquer is sprayed on; then, when the surface is dry, it is rubbed to a satin sheen. It is steelwooled again in spots and waxed.

Of course, this is one man's way of duplicating an antique. Another craftsman might produce the same finish in a different way.

I believe you will be successful if you can copy a real old piece detail for detail. After finishing a few sample pieces, a production schedule can be worked out and colors can be matched by your finish supplier.—*Ed Hogstrom.*

---

## Spruance's New Facilities for Producing NGR Stains

The Gilbert Spruance Co. (finishing materials), Philadelphia, Penna., and Winston-Salem, N.C., announces installation of what is considered to be one of the most efficient engineering processes for the production of NGR stains. In addition to efficiency, the quality of the stain is assured by the use of an integrated process involving filtration, standardized base-color solutions, automatic metering pumps, and color control by spectrophotometer.

Continuing, the company declares that behind this process were years of laboratory research which required hundreds of tests on dyes in order to select the most light-fast, most soluble, most stable, non-bleeding ones for use in base solutions. Likewise hundreds of tests were run on various solvents and combinations of solvents to determine which combined maximum drying speed with maximum color penetration and minimum grain raising. From these tests, an optimum solvent combination was selected, as were an orange, yellow, red and black dye for the production of base-color solutions.

In the manufacturing process, each of the four dyes is dissolved in a separate solvent mix, filtered to remove the finest undissolved particles, and then standardized by solvent addition to a predetermined storage strength value. This strength measurement is carried out on a spectrophotometer. After standardization, the base solutions are pumped to storage tanks and drawn upon as required.

When a stain is to be made, the amount of each color plus the diluents such as methanol are obtained from the formula library, and automatic metering pumps are set to deliver the desired amount of base and then automatically shut off. The diluent is also meter pumped into the blend or final stain tank so that entire procedure is a "push button" operation.

Experience at Gilbert Spruance has shown that the accuracy of the pumps is well within the color tolerance range. The final blended wood stain is checked against a standard for color on paper and wood and occasionally on the spectrophotometer if any discrepancies appear.

Cooperative work done by the laboratories of Gilbert Spruance Co. and International Nickel Co. indicated the proper metal alloy to be used for long time contact with NGR stains and bases, and all the processing equipment described above was fabricated of this material. It was also found that a baked phenolic lining on the inside of a steel drum readily withstood any stain effects and so this type drum was adopted as the shipping container.

---

**CONSTANT STUDY AND RESEARCH . . .**

one of many reasons for the

INDUSTRIAL FINISHING leadership

enjoyed by the

NATIONAL

LACQUER & PAINT CO., INC.

7415 S. Green St. Chicago 21, Ill.

*Your Signal!* **9-8-7-0**

**CLEAR METAL LACQUER**

**For**

**silver, cadmium, zinc, copper, brass, aluminum.**

**OUTSTANDING**

1. Adhesion to metal surfaces
2. Resistance to sulfur tarnish
3. Resistance to oxidation
4. Resistance to perspiration
5. Resistance to abrasion

Pale in color. Takes 100-200% reduction. Dries under 15 minutes.
A premium product — priced at ordinary lacquer levels.

**THE VARNISH PRODUCTS COMPANY**

**5206 HARVARD AVENUE**
**CLEVELAND, OHIO**

*NOW!* **Tack Cloth in Handy Rolls *or* Cut Bulk**

**Cut off any size piece and use as needed.**

Now you can get Tack Cloth packed the way it's easiest for you to use—either in 150 yard rolls of 36" wide cloth or in handy cartons—100 or more Tack Cloths to the carton.

No matter which way you buy it, you can be sure that every square inch will stay SOFT and TACKY until the very last bit is used up.

The Cut Bulk size is 18" x 36"—folded to 4½" x 18" for easy handling. All of our Tack Cloth is Spontaneous Combustion-Proof, Lint-Free and Wax-Free. It's clean and sanitary—there's no waste.

Write today for complete information, prices and samples.

**Already cut and folded, ready to use.**

**Baughn Chemical Products Company**

**"The Tacky Wiper Specialists"**

**7027 N. RAVENSWOOD CHICAGO 26, ILL.**

**Also Individually Packed in Glassine Envelopes —144 to the Carton.**

**A WARRANTY OF SATISFACTION IN EVERY CARTON**

## "Mark-A-Zone" Broad Striper

For quickly painting broad color stripes to mark borders, zone lines or dimensions on floors, pavements, platforms, etc., E. B. Beugler, 3667 Tracy St., Los Angeles 39, Calif., announces the Mark-A-Zone which is illustrated here. With this device an operator can paint as much as 1500-ft. of standard 3⅜-in. stripe per hour on short lines. There is no brush, no roller, no motor, no spray gun.

No brush, no roller, no motor, no spray gun

The principle of operation is gravity feed, the flow of paint being controlled by contact of the rubber spreader with the surface to be painted. The spreader head, the only part requiring cleaning, is easily removed.

After paint or lacquer is placed in the reservoir, lower the handle and slowly push the machine forward along guide line. To stop flow, just raise the handle. That's all. Rate of travel governs the thickness of paint ribbon.

---

## One-Coat Bake Enamel For Odd-Shaped Metal Parts

A new one-coat synthetic enamel for conveyor dip application on odd-shaped metal items has been developed by the United Lacquer Mfg. Corp., of Linden, N.J., manufacturer of industrial finishes.

This new product, Base 38862, brakes at vital points and adheres well to various types of metals. Because of these properties, this synthetic enamel covers all surfaces of odd-shaped items uniformly in a single dip operation.

Since enameling such odd-shaped pieces normally has required more than one operation, use of the new one-coat enamel is expected to yield considerable savings in manufacturing time and unit costs.

Base 38862 flows well on carpet sweeper bodies, odd-shaped metal containers and other similar objects. It may be baked in a gas oven or under infra-red lights. It is available in all colors, in a gloss, satin, or dull finish.

---

## Tumbling Barrel Lining

Lupomatic Industries, 4510 Bullard Ave., New York 66, N.Y., manufacturer of the Tumb-L-Matic line of equipment, compounds and supplies, announces a new type material that

**Be Fresh . . . Stay Fresh!**

on

**PAINT SPRAY JOBS**

**wear a DUPOR Chemical Cartridge Respirator No. 10**

Ideal for paint, lacquer, enamel vapors, fumes, gases, etc. Face mask gives air-tight fit, controlled breathing, panorama vision with no blind spots. Cartridges are of colored plastic for easy identification! When ordering, specify the WHITE for Code A; BLACK, Code B; YELLOW, Code AB.

*Sample sent*
*$4.50 pp*

**H. S. COVER**
**South Bend, Ind.**

COVER'S
GAS-TIGHT
FOG-PROOF
GOGGLES
$1.65

---

Mac's **FASHION SEALERS & LACQUERS**

A specially formulated sealer for the first coat under clear gloss or flat lacquers provides a good body and sands easily. Also works well under varnish and enamel. A production test will prove its superiority.

MAC'S FASHION LACQUERS are available in clear and opaque for application to all kinds of surfaces. Spray easily and give good coverage in any desired sheen. Outstanding for clearness and attractiveness. **Do not get cloudy.** Write for a production test sample and descriptive folder.

**The Lawrence-McFadden Co.**

**Headquarters for Fine Finishes Since 1875**

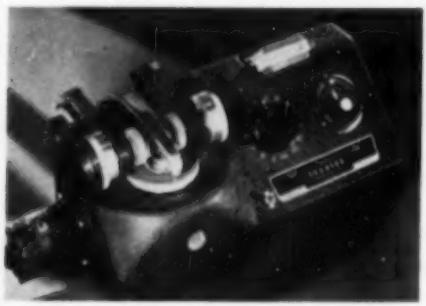
**7430 STATE ROAD** *"Our 75th Year"* **PHILADELPHIA 36, PA.**

can be used for making complete barrels or used as a lining for tumbling barrels made of other materials. It has the necessary resilience, so essential to tumbling, does not warp, has the strength of steel, and can be sawed or drilled.

## For Testing Abrasion Resistance of Coated Surfaces

The new Taber Abraser incorporates the proven Taber rotary rub-wear action of dual abrading wheels crisscrossing their abrasion path. The right wheel rubs the specimen from the center outward and the left wheel rubs the specimen from the outside in toward the center, so the abrasion lines cross each other like the letter X. The action is continuous throughout the 360° rotation of the specimen and closely parallels abrasive wear encountered in actual use, such as handling and cleaning paint surfaces, walking on floor coverages, and like sources of abrasive wear. This abrading action has proven outstanding for accurate determination of the effect of wear on new materials in comparison with similar materials used in the past.

Acceptance of Taber Abraser test as a standard test includes the principal industries in the automotive, chemical, textile, paint and other industrial fields, both in the United States and foreign countries.



For testing abrasion-resistance of surfaces.

A variety of holders for different kinds of specimens have been developed, such as the rimmed specimen holder that can be partially filled with a liquid sufficient to wet the specimen or completely cover it while undergoing abrasion test. A test such as this reveals important facts regarding the wear life of materials subject to abrasion under both wet and dry conditions. Specimens cut from a flat sheet, or coatings applied to specimen plates are usually tested on the "flat top" holder.

In general, the abrading wheel should be selected to correspond as closely as possible with the type of service which the specimen will be subjected to in actual use, and a selection of 10 kinds are available. This machine is a product of Taber Instrument Corp., 108 Goundry St., North Tonawanda, N.Y.

## Tone Furniture Polish

Tone Furniture Polish is a silicone containing product. Silicones were first produced commercially during World War II by the Dow Corning Corp., and have the unusual properties of being virtually unaffected by great heat or cold; they have extreme water repellency and great durability to exposure to severe conditions. Tone Polish contains these silicones and as a result of the combination of the silicones with other materials it has the following characteristics:

1) Excellent "depth" of appearance combined with high gloss and clarity.

2) Extreme durability of the clear glossy polish produced. Tone does not "gray-down" or become hazy or cloudy within a short time after polishing; it remains unchanged for months after application.

3) It is remarkably easy to use. Just wipe or spray it on, let the sol-

## FINISHES FOR THE PRODUCTS OF INDUSTRY

• NEOPRENE COATINGS

• VINYL FINISHES

***Pioneers in* NEOPRENE *and* VINYL *Products***

***Write for Literature***

GATES ENGINEERING CO.

NEW CASTLE, DELAWARE



## "The Silk Screen Printing Process"

**By J. I. Biegeleisen and E. J. Busenbark**

THIS LATEST book on the subject covers everything that is worth while to have in book form about the silk screen printing process. It covers in detail all of the equipment, printing apparatus, tools, etc., and the paints and materials that become the finished product; tells how to select them for various purposes and how to handle them for best results.

Information is given about the reproduction of printing and art work by this process on various surfaces such as paper, cardboard, cloth, felt, wood, metal and composition materials. Also, the making of drawings and stencils, finishing work, estimating costs, shop management and recent developments.

***Second Edition***
***225 Pages, 6x9***
***90 Illustrations***
**$4.00 POSTPAID**
***Remit with Order***

INDUSTRIAL FINISHING,
1142 North Meridian Street, Indianapolis 4, Indiana

vent dry off, then polish. If sprayed, Tone should be fed to the spray gun from an agitated tank. Tone is easily brought to a polish by simply wiping with cotton rags or waste, even after drying on the surface for weeks, although the usual drying time is three to five minutes. No hard buffing is required at any time.

4) Extremely high water-repellency of the polished surface. Water will not "wet-out" the Toned surface, but will stand up on it in large drops.

5) Outstanding smoothness produced on the polished surface. Tone imparts an extremely smooth polish film to the finish which is easy to keep clean because dust and dirt do not readily adhere to the polish.

Tone is a product of Tone Mfg. Co., 710 Monroe Ave., N.W., Grand Rapids 2, Michigan.

## Bench Blast Cabinet for Cleaning Small Parts

Designed for abrasive blast cleaning of small metal parts, a new portable bench blast cabinet will operate on the compressed air supplied by a standard 5-hp. 2-stage compressor. The operator loads the parts through the top hinged cover and observes the work through a window in the cover. Operator's hands in rubber gloves rotate work in the blast stream. A ventilating fan draws off the dust, which is retained in a removable filter bag. Vision during blasting is given by a side-mounted light. Cabinet requires bench space of 14x18-in. It is a product of The W. W. Sly Mfg. Co., 4700 Train Ave., Cleveland 2, Ohio.

Handy for blast cleaning small parts.

## Cleans Safety Equipment

A new cleaning solution for personal safety equipment such as goggles, respirators and helmets is announced by American Optical Co., Southbridge, Mass.

Combining the best properties of both a germicide and detergent, the No. 101 Germicidal Detergent removes dirt and deposited skin oils without inducing corrosion, staining or deterioration of rubber, plastic, or metal parts. The solution may be used for spraying, swabbing or immersion.

## Stantite Metal Primer

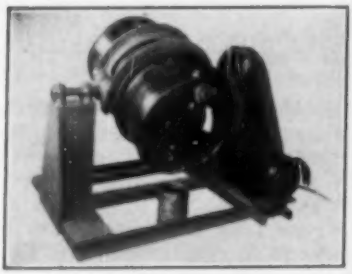
Stantite Spraying Primer is a new type of rust-inhibiting primer and preparation coating designed for use under either air-dried or baked finishes. It has outstanding adhesion to steel, stainless steel, galvanized iron (with no previous treatment), zinc, nickel, cadmium, brass, copper, aluminum (anodized or not), magnesium, glass, many molded items, and old finishing systems which are firmly attached to the base material.

Metal surface preparations other than cleaning are of no added value when Stantite Spraying Primer is used.

One of the major merits is its proven ability to prevent "rust-creep"

# CHANGE DRUM TUMBLER

***Mixes in Suppliers' Drums***



**AVOIDS:**

The fire hazard of open drums
Contamination of one product with another
Cleaning of equipment between mixes
Residual sludge.

**ASSURES:**

Uniform mix
Easy inspection during operation
Withdrawals in any quantity needed
Portable ramps for fast insertion and removal of containers
Hand Control at motor to place drum in any position

**THE VOL-U-METER Company, Buffalo 16, N. Y.**

# I. C. D. FORMULA NINE

## NON-INFLAMMABLE « *wax free* REMOVER »

**for paint, varnish, lacquer, baked enamel, adhesives**

## EASY TO APPLY—NO AFTER CLEANING

**I. C. D. FORMULA 9** is the standard of safety and quality . . can be sprayed or brushed . . doesn't raise grain nor discolor . . quickly removes all kinds of finishes and coatings from any surface or material . . costs less to use . . saves time, labor and material.

**BRUSH CLEANER I. C. D.** — non-inflammable brush cleaner works fast . . does not injure nor loosen the bristles. Easy to use . . leaves the bristles clean as a whistle. Order a gallon can and convince yourself.

ORDER TRIAL GALLON AT DRUM PRICE

**INDUSTRIAL CHEMICAL DEVELOPMENT CORP.**

515 FLUSHING AVE. BROOKLYN 5, N. Y.

—the extension of corrosion underneath a topcoat broken by use or abuse.

This primer dries quickly—in a few minutes at room temperature or in one minute under a hot air blast. Baking topcoats, including 2-coat systems, may be applied over it with excellent results.

Adhesion of all types of topcoats to Stantite Spraying Primer is excellent. Topcoats applied over this primer, both in addition to and because of their strong bond to it, show remarkable resistance to abuse and to tests such as the conical mandrel flexibility test.

Stantite-primed items may be stored for future finishing. Some chalking may occur during outdoor storage but no other impairment will result.

Stantite is a product of The Stanley Chemical Co., East Berlin, Conn.

## New 'Tag' Pocket Instrument Indicates Relative Humidity

A precision pocket instrument (shorter than a pencil) that shows relative humidity by the accurate wet-and-dry bulb method has been developed by the Weston Electrical Instrument Corporation, 614 Frelinghuysen Ave., Newark 5, N.J. Known as the "Tag" Pocket Humidicator Model 8704, this compact new instrument can be used either in the hand or mounted on a wall. A simple built-in slide rule converts the wet-bulb and dry-bulb readings directly into relative humidity, eliminating charts or tables.

Two etched scale glass thermometers are individually hand-calibrated for permanently accurate readings. These are secured in a sturdy white plastic case by integral resilient mountings. The psychometric slide rule forms the cover of this case. For use, a few drops of water are applied to the thermometer wick, and the instrument is fanned or swung for several moments. Setting the wet-bulb reading opposite the dry-bulb reading on the slide rule then indicates relative humidity.

Convenient, accurate, economical, desirable.

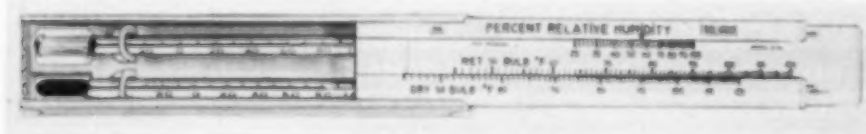
## Bright One-Coat Finish for Metal and Wood Toys

A new economy-priced, one-coat synthetic enamel for metal and wood toys, Base UL-160, has been introduced by the United Lacquer Mfg. Corp., Linden, N.J., manufacturer of industrial finishes.

The new synthetic enamel, the company's lowest-priced since the end of World War II, was formulated in response to a demand from toy manufacturers for a lower-priced finish with high "eye appeal".

The new finish has high gloss and color brightness. It is suited for spray or dip application. One coat applied over metal and wood toys provides excellent coverage and an extremely high luster if desired.

Available in all colors, Base UL-160 may be baked at around 250° F. for 10 minutes when applied on metal. It will air dry overnight, when used on either wood or metal.



## RONCI SPEEDIP WHIRL ENAMELER

Made In Two Sizes, R-100 and R-200 Capacity 312-cu.In. and 1206-cu.In.

**IDEAL FOR LACQUERING AND ENAMELING SMALL PARTS UP TO 7-IN. IN LENGTH**

**CUTS COSTS, SAVES UP TO 80% OF MATERIAL**

Carries up to 75-lbs. per load, and up to 30 loads per hour can be coated with lacquer or enamel in these machines.

All operations are within the machine. Dipping tank is raised, submerging the parts in the basket, and then lowered and the parts whirled, throwing off excess material. No additional outside tanks required; no cleaning necessary when changing colors; no loss of material.

**PROMPT DELIVERIES**

Write for further information and submit samples to be coated.

**RONCI MACHINE COMPANY**

A Division of F. Ronci Co., Inc.

2 ATLANTIC BOULEVARD CENTREDALE 11, R. I.



## BOOKS On Finishing Available

| | |
|---|---|
| "MODERN ORGANIC FINISHES—Their Application to Industrial Products" (452 pages) New | $8.50 |
| "CHEMICAL FORMULARY" (Vol. VIII) | 7.00 |
| "FINISHING METAL PRODUCTS"—2nd ed. (352 pages) | 4.00 |
| "PRACTICAL FURNITURE FINISHING" (112 pages) | 1.25 |
| "FURNITURE FINISHING" (543 pages) | 4.00 |
| "SPRAY PAINTING"—Industrial and Commercial (169 pages) | 2.00 |
| "THE MIXING OF COLORS AND PAINTS" (292 Pages) | 2.50 |
| "WOOD FINISHING" (361 pages) | 2.50 |
| "NATIONAL PAINT DICTIONARY" (704 pages) | 7.50 |
| "MODERN POLISHES AND SPECIALTIES" (313 Pages) | 7.50 |
| "PRACTICAL COLOR SIMPLIFIED" (128 Pages) | 5.00 |
| "GRAINING"—Ancient and Modern (224 Pages) | 4.00 |
| "THE SILK SCREEN PRINTING PROCESS" (225 pages) | 4.00 |
| "INDUSTRIAL APPLICATIONS OF INFRA-RED" (200 pages) | 3.50 |

***Cash Must Accompany Order—Send for Descriptive Circular***

**INDUSTRIAL FINISHING**

1142 NORTH MERIDIAN STREET INDIANAPOLIS 4, INDIANA

## "Griprite" Rubber Glove

A new industrial rubber glove, called "Griprite" is announced by The B. F. Goodrich Company. Made with a roughened surface which is an integral part of the glove, it insures a firm, tight grip even in the wettest application allowing work under these conditions to be accomplished with ease and speed. The glove enables the wearer to grip the smallest objects firmly and with confidence.

Made by the celebrated Anode process, the glove has curved fingers, is 14 inches long, identified by an orange band at the cuff, and made in sizes 9, 10 and 11, in black.

## Explosion-Proof Propellor Fan

Development of a new series of Type "X" explosion-proof propeller fans for class I, group D hazardous locations, combining the performance features of the Ilg Type "Q" propeller fan and the ball-bearing explosion-proof motor, is announced by the Ilg Electric Ventilating Co., 2850 N. Crawford Ave., Chicago 41, Ill.

The exclusive, aluminum Type "Q" propeller fan wheel of patented design, dynamically balanced for smooth, effortless operation, offers the extra air-moving capacity characteristics of this recent development of the Ilg Research Laboratory. The cast aluminum fan frame has streamlined air inlet for smooth, efficient air flow.

Eight models are available with one-phase and 3-phase motors as listed. All sizes are suitable for horizontal or vertical operation (fan wheel above motor, blowing up).

Available in eight different models.

## Durable Clear Lacquer for Aluminum Window Frames

A clear lacquer that is resistant to moisture, alcohol, alkali, greases and numerous chemicals—one especially adapted to use on aluminum window frames—is announced by Maas & Waldstein Co., 438 Riverside Ave., Newark 4, N.J. It adheres satisfactorily to practically all metals.

Dulac Clear Lacquer D-129 is the name of this material. According to the manufacturer, aluminum window frames, properly coated with this lacquer, have shown no evidence of finish failure or "lime burn" after 30 days contact with lime mortar at 100% humidity at room temperature. It dries dust free in 5 to 10 minutes and is hard to the touch in one hour.

## Clear Baking Finish for Brass

A new anti-corrosive clear baking finish for brass and brass products has been developed by the finish laboratories of Standard Varnish Works, 2600 Richmond Terrace, Staten Island 3, New York.

Named "No. 7318 Clear Baking Finish", the new coating is suitable for builders' hardware, cosmetic cases, lighting fixtures, marine fittings, luggage hardware — wherever brass or brass plating is employed.

Standard finishing engineers have

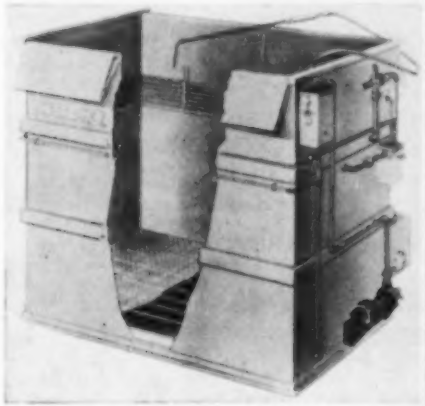
subjected applied samples to punishing tests for abrasion, perspiration, and humidity (hardware, cosmetic cases, lighting fixtures, etc.) and to tests for moisture and salt spray resistance (marine fittings, exterior hardware, and other items subjected to exposure). Results of thees tests showed conclusively that the new finish affords outstanding protection against all of these chemical and physical abuses.

Further details, including a comprehensive Technical Bulletin, may be obtained by writing the Industrial Sales Department of Standard Varnish Works.

## Large Vapor Degreaser

The design of a new, large capacity Circo vapor-spray degreaser is announced by Circo Products Co., 6531 Euclid Ave., Cleveland 3, Ohio. This new model, called the C-120, was designed for heavy industrial use. It has a vapor depth of 7-ft., inside length of 8-ft. and width of 5-ft.

The C-120 Circo degreaser is available in either nickel clad, stainless clad or zinc sprayed construction. Its nonflammable, non-explosive solvent



Width, 5-ft.; length, 8-ft.; vapor ht., 7-ft.


Packard

LIKES LACQUER BEST BECAUSE...

. . . versatile lacquer pays off all down the line for the Packard Motor Car Company.

Fast-drying lacquer pays off on Packard assembly lines with production speed and economy. Lacquer dries in minutes. Result: minimum dirt pickup, almost immediate mar resistance.

Colorful lacquer pays off Packard dealers at point-of-sale. Lacquer glamorizes the distinctive Packard body lines, brings out brilliant color and depth like no other finish.

Durable lacquer pays off Packard owners. Lacquer finishes last longer. Their original lustre is quickly restored.

*HERCULES POWDER COMPANY*
*928 Market St., Wilmington 99, Del.*

HERCULES DOES NOT MANUFACTURE LACQUERS, ONLY THE DERIVATIVES FROM WHICH THEY ARE MADE

LACQUER
HELPS YOU SELL

CLSO-16

Stille-Young
LACQUERS
ENAMELS
FILLERS
PAINTS
STAINS

For Highest Quality Finishes
Beauty and Durability

**STILLE-YOUNG**
*Manufacturers*
2752 N. CLYBOURN AVE. • CHICAGO 14

a Ufinco Product

*"Your Seal of Dependability"*

**IT'S HERE**
**LC-53 Clear Lacquer**
A 35% solids lacquer that is sprayed without heating or thinning. Has been tested and is being used by many familiar names in Wood Products. THE MILEAGE IS UNBELIEVABLE.
Write today for a sample or five gallons at drum price.

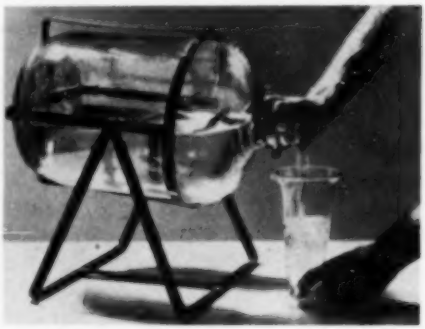
**UNITED FINISH COMPANY**
*established 1921*
**PEABODY, MASS.**
*Representatives throughout New England*

is heated by steam, gas or electricity, forming a blanket of vapor which is 7-ft. deep. Ample heat input assures a cleaning capacity of 18,000-lbs. per hour. An outside water jacket and inside water coils give double protection against vapor loss. Safe, economical operation is assured by a fully automatic control system.

According to Fenton Davison, vice-president, " 'Circo-Solv,' the solvent used, is absolutely harmless to all metals." He further stated that "depending on size, parts degreased by the Circo vapor and spray method can be removed absolutely clean and dry in one to 15 minutes."

## Pouring Liquids Safely

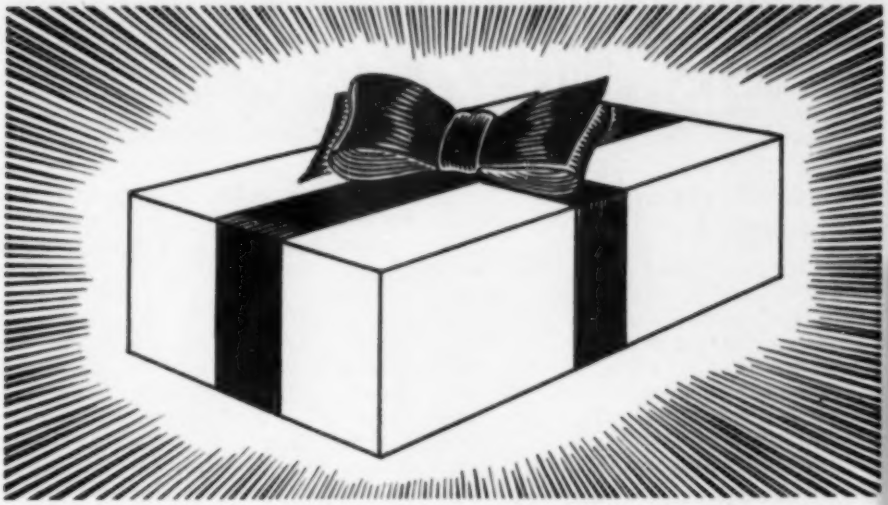
The GS tilter for 5-gallon bottles provides a safe and easy method of pouring liquids into smaller containers. It is designed to prevent accidents caused by spilling, splashing and carelessness in pouring liquids. A chain is provided to hold the bottle in position when tilted.



Convenient, safe and economical.

The cradle is made of steel. All members are riveted or welded to insure a strong and durable device for this purpose.

For complete information, write to General Scientific Equipment Co., 2700 W. Huntingdon, Philadelphia 32, Pa.



# We make packages that are *never* opened

. . . because our packages are the coatings wrapped around thousands of industrial and consumer products: to add to their appearance, increase their usefulness, and lengthen their life . . . in short, to boost their sales appeal.

**Stanley** coatings and finishes can move your products faster, because our chemists work with your engineers to create just the right finish for your specific product application.

Our emphasis at **Stanley** on "special finishes for special applications" has helped to sell products throughout industry: your product need be no exception. Write us about your finishing needs today: **Stanley Chemical Company, East Berlin, Connecticut.**

STANLEY

*Industrial Coatings*

**STANLEY CHEMICAL**

LACQUERS SYNTHETICS JAPANS ENAMELS

# Industrial FINISHING Editorial

## Fewer Accidents in Industry

Industrial injury rates for last year, released by the National Safety Council in advance of the 1950 edition of its annual statistical yearbook, "Accident Facts," show a substantial reduction in both the frequency and severity of 1949 accidents as compared with 1948.

Thirty-eight of the 40 basic industry classifications reduced their frequency rates, and 28 reduced their severity rates.

The accident frequency rate for employees in all industries submitting company reports to the Council, based on the number of disabling injuries per 1,000,000 man-hours, was 10.14 in 1949—a reduction of 12% from the year before.

The communications industry again led all other industries by turning in the lowest employee frequency rate. Its rate was 2.14—an 18% reduction from 1948. Aircraft manufacturing again ranked second with 4.25, followed by the electrical equipment industry with 4.83 and steel with 4.96.

Lumbering stayed at the bottom of the frequency list in 1949, with a 47.72 rate, but this represented a 3% reduction. Although coal mining reduced the frequency of its accidents 10%, it could not climb from the next to last position with a 41.48 rate. Mining other than coal was third from the bottom, just below marine transportation.

The accident severity rate for all industries reporting to the Council, based on the number of days lost per 1000 man-hours, was 1.02 last year—a reduction of 9% from 1948.

Communications also had the lowest severity rate, leading all other industries with a rate of .15—a 17% drop from 1948. Printing and publishing came up from fourth place in 1948 to tie for second in 1949 with a substantial 47% reduction to give it a rate of .23. The tobacco industry equalled this rate, even though it showed a 21% increase. The service industry was third, with a 63% rate reduction and boosting it up from 15th place in 1948.

---

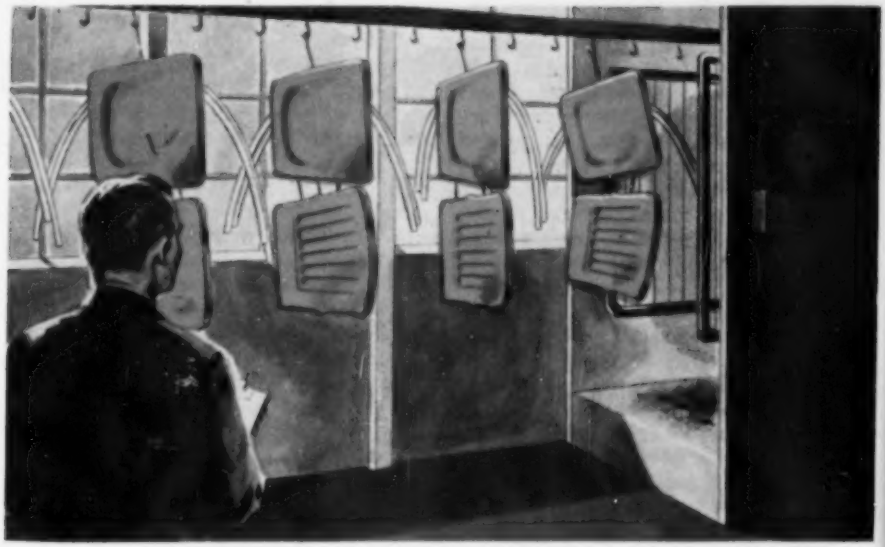
## Power Tools for Light Operations

Regarding power tools with which to perform necessary operations on parts or products being manufactured, one rule-of-thumb axiom goes something like this: If the items or objects to be worked on are smaller than the machine, then move them to and away from the machine for the operation; but if they are larger or bulkier or heavier than the machine or power tool, then move the machine to them. Often this axiom is followed in production work, but not always.

Moving the machine to the product to be worked on is accomplished more easily and more frequently today than ever before because so many machines and power tools have been made small enough to be readily picked up, handled and guided to the work by hand.

Everyone can call to mind several portable power tools for performing

*(Continued on page 116)*



# metal lawn furniture

A successful exterior finish for metal lawn furniture must meet two important requirements.

Number one is Production—high speed conveyors require a paint that will bake out quickly to allow immediate packaging and shipping after coming off the conveyor.

Number two is Wear—metal lawn furniture is subject to considerable abuse . . . exposure to the elements . . . rough treatment by users . . . rust . . . abrasion . . . careless storage for off season. No simple matter to formulate a paint that will retain its beauty under such conditions, yet Tousey has developed such a product, and it is being used successfully by a leading lawn furniture manufacturer.

Write today for further information.

Read the story of the Tousey Varnish Co.
Ask for your copy of "65 Years of Achievement" it's free.

TOUSEY PRODUCTS
DURACOTE for DURABILITY

*TOUSEY FINISHES CAN TAKE IT!*

**TOUSEY VARNISH CO.**

520 WEST 25TH STREET • CHICAGO 16, ILLINOIS

various operations. In finishing rooms and paint shops there are sanders, spray outfits, mixers or stirrers; rubbing, buffing and polishing machines; and many others. Power to drive some of these devices is transmitted electrically through insulated wires; others take their power from compressed air that comes through piping and hose. Still others are powered through a flexible shaft connected to a motor which is mounted on a stationary or portable stand.

In every case some tangible mechanical connection is necessary between the source of power and the point of power application. Perhaps the next major development in power transmission will see the elimination of this tangible mechanical connection which so often gets in the way of the operator and which always puts definite limits on the "reach" of all portable tools.

Transmission of power to machines without tangible connection to a source of power should be applicable first to the light portable power tools such as those used in finishing rooms and paint shops. However, until that development arrives there are many opportunities in most factories, to mechanize some operations which are still being performed slowly, laboriously and expensively by hand, or only semi-mechanically. That's where production costs are high today.

### *Platers' Cleaner*

An electrolytic cleaner, compounded especially for use on steel, brass, nickel and die castings, is described and illustrated in a folder being distributed by Detrex Corporation, Box 501, Detroit 32, Mich.

NEW and better

BFC LACQUER THINNER

*with these extra values at no extra cost*

**Better Solvent Strength**—You can use higher-solids
**Better Flow Out**—Less Orange Peel—Less Blushing
**Better Gloss in Your Coatings.**

Chances are that BFC LACQUER THINNER costs no more—possibly less—than you now pay. You have everything to gain—nothing to lose—by getting our price and special Test-Sample Offer. Write today.

**Better Finishes and Coatings, Inc.**
268 Doremus Avenue, Newark 5, N. J.
122 East 7th St., Los Angeles 14, Calif.

## Color's Effect on People

★ Most persons will agree that color has a lot of charm, that it may be exciting, pacifying, cheering and the like. Yet to admit that the effects of color are deeper, that they have a biological as well as a psychological power, may inspire less enthusiasm and more skepticism.

According to studies analyzed by the Color Research Laboratory of the Sun Chemical Corporation, New York, physical effects from color are not only possible but unavoidable. Whether we like it or not, color will do things to us.

Several authorities have agreed that there are certain direct connections between the eye, brain and the muscles and organs of the body. Sudden motion or brightness may cause the head to dodge involuntarily and the eyes to blink. Under the stimulation of bright lights and vivid hues, muscular tension will increase—and with this increase will go a rise in blood pressure and pulse rate. On the other hand, dim lights and soft, cool hues will release tension and cause blood pressure and pulse rate to drop.

Such reactions have also been observed in blind individuals. The evidence seems to be that the body has a radiation sense. It will, of course, grow tan under the action of ultraviolet (invisible light). But less known today is that visible colors—red, yellow, blue—also have physiological influence. In other words, human bodies, like plants, are quite sensitive to color and visible light energy.—H.S.

---

★ *Guest Editorial . . . Many readers can write an excellent editorial—two or three paragraphs that present a timely suggestion or valuable idea which will stimulate thought on a live subject. The Editor welcomes guest editorials and pays for those used.*


*The Sign of*

**CLINCO**

*Highest Quality*

**LACQUERS - - -**

**- - - ENAMELS**

Let us help you with
your finishing problems

**THE CLINTON COMPANY**
1210 Elston Ave., Chicago 22, Illinois



**GET THIS BOOK**

COLOR formulas and Useful Color Cards. Description, Properties, Theory, Harmony and Management of Colors. Furniture and Polychrome Finishing. Color and Light; Description of Color Pigments; Properties of Color Pigments; How Colors Are Prepared for the Trade; Basic Paint Pigments; Painting Oils; Volatile Thinners and Dryers; General Paint Mixing Methods; Color Theory, Principles and Use; Colored Paint Mixing. Methods; Mixing Special Purpose Materials; Color Harmony and Management; Selecting Color Schemes.

*296 Pages, Fully Illustrated with Color Chart and Drawings.* Cloth. Price..... **$2.50**

**INDUSTRIAL FINISHING**
1142 N. Meridian St. Indianapolis 4, Ind.

THE LANLY CO.
INDUSTRIAL OVENS
760 PROSPECT AVENUE • CLEVELAND, OHIO
CONSULT US REGARDING: HEAT TREATING OVENS • CORE OVENS
PAINT OVENS • RUBBER CURING OVENS • AIR HEATERS, ETC.

## Foreman Meetings Once a Month

★ In our plant all of the foremen get together once a week for a meeting. The factory superintendent is chairman, and the vice president of the company sits in to represent top brass. First we have brief reports on production, rejects and shipments. Questions and discussion follow. Then a short time is allowed for each foreman to report, comment or complain. Finally the weeks' employee suggestion box slips are read aloud and those worthy of further study and consideration are referred to the suggestion committee.

These are friendly meetings, and I believe they do a lot of good. As foreman of the finishing department, I find out some of the problems of the assembly room, fabrication, parts storage, inspection and shipping. We all get to know each other better, and the friendly rivalry makes for cooperation rather than discord.—F.F.

## Paint Specifications; Grind Fineness

★ Large industrial users of paints and protective coatings realize the necessity of having their paint products kept uniform from shipment to shipment. As a result, many of them demand that their specifications be met regarding such properties as weight per gallon, viscosity, color, and drying or baking requirements.

Another property that should be tested is the *grind fineness* which tells how well the pigment has been ground by the supplier. This can be easily ascertained through the use of an instrument such as the relatively inexpensive Hegeman Fineness Tester.

Maintenance of the same grind fineness will insure that the pigments have been ground to the same degree of color development and film smoothness. Significant differences in grind fineness will thus affect such properties as coverage per gallon, gloss, and film smoothness—all of which are of vital importance to the cost and quality of the finished product.—*Louis E. Martin.*

## E. D. Williams, Sales Manager of The Arco Company

Edward D. Williams, formerly sales manager of the X-Ray Products Division of The Ansco Co., has been appointed sales manager of Production Finishes Division of The Arco Company, Cleveland, Ohio, manufacturers of paints, varnishes, lacquers, enamels and protective coatings.

Mr. Williams, graduate of Amherst College, 1937, served in National Carbon Company's foreign division in New York and later was acting sales manager of their sales organization in India.

## Random Comment on the Industrial Scene

*(Continued from page 12)*

importance to many industrial fields and agriculture, as well as the fortunes of cities. They involve the seeding of clouds with dry ice and the use of silver-iodide smoke for inducing precipitation.

* * *

**New Screen Process Press** is being shown in a New York gallery—and an English made press was demonstrated last November at the First SPPA International Convention held in Cleveland.

This new press is an indication that the silk-screen industry is progressing toward mechanization. Through this, many new fields will be opened and mass production processing will be made possible.

* * *

**X-Ray Rental Service** to industry is now available. The equipment is valuable to industry in quality control, research and cost reduction programs. It is made available at a monthly fee covering use of apparatus, maintenance and replacement parts. The plan follows the usual service-and-rental systems, permitting the plant to take advantage of cost reduction benefits without a huge investment in capital goods.

---

### *DeVilbiss Co. to Build New Plant in Somerset, Pa.*

The DeVilbiss Co., manufacturer of air compressor outfits and spray painting equipment, will soon establish a modern manufacturing plant in Somerset, Pa., it is announced at the company's general offices in Toledo, Ohio.

The early start of operations in Somerset will greatly improve the company's competitive position, result in closer cooperation with many of its major suppliers and permit more rapid and economical distribution to its customers, the company announcement said.

*"Wood Graining"*

**ADDS**

*Eye Appeal*

American Graining Plates are photographic reproductions of fine woods.

**AMERICAN RICHWOOD PRODUCTS CO.**

Graining Plate Division

104 E. Mason St., Milwaukee 2, Wis.

RESTORE PAINT IN 2 MINUTES

PER GALLON WITH

**MIRACLE BLUE - BOY**

5 GALLON

**PAINT REJUVENATOR**

Paints, lacquers and enamel products can be restored to their original consistency without opening the can. Units available to handle from ¼ pint to 50 gallon drums. Immediate delivery.

Originators of paint rejuvenating equipment---sixteen years—thousands of satisfied users.

*Write for folder & prices*

MIRACLE PAINT REJUVENATOR CO.

127 E. 9th Street St. Paul 1, Minn.

# BRAKE SHOE ANNOUNCES A REVOLUTIONAR

## *that in one pass will apply a* 2 MIL FILM *of*

THIS BRAKE SHOE
*STEAM-SPRAY GUN*
MAKES THE STEAM
SPRAY PROCESS PRACTICAL
FOR PRODUCTION-LINE USE

1 Exclusive insulation and radiating design assure trigger and handle temperatures which are comfortable to the bare hand.

2 Full range of spray width control—can be adjusted to any degree desired.

3 Revolutionary spray head with one-piece, easy-to-clean air cap and fluid nozzle designed to provide uniform distribution of material.

4 One-piece needle assembly—self-centering needle.

5 Adjustable fluid needle.

6 Hose support reduces downward torque on head and contributes to the fine balance of the gun.

7 A built-in finger guard is provided.

*You don't need gloves to handle this gun . . . you can comfortably spray all day with your bare hand.*

Write for descriptive brochure to:
KELLOGG DIVISION
94 Humboldt Street
Rochester 9, New York

AMERICAN
**Brake Shoe**
COMPANY

STEAM-SPRAY GUN....

# HIGH VISCOSITY material

## what Steam Spraying is

Steam spraying is a revolutionary spray painting method, developed by du Pont (patent applied for), using super-heated steam in place of air. Steam spraying efficiently applies high viscosity materials in a film thickness of 2 mils in one pass. It is a process that opens up new possibilities for industry in the reduction of finishing costs.

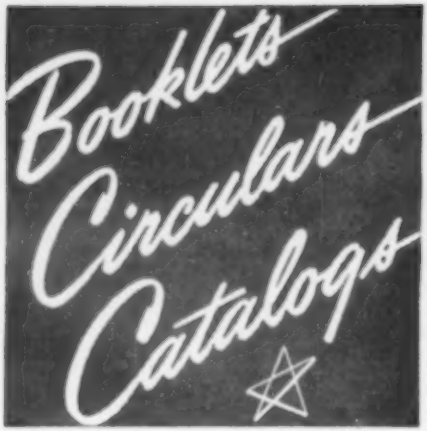
## Steam Spraying is the practical answer to high-speed production painting

- Steam spraying may be applied to production operations at moderate installation costs.
- Steam spraying tremendously increases the productivity of existing equipment.
- Steam spraying makes possible the application of heavy one-coat films without sagging or popping.
- Steam spraying cuts finishing time.
- Steam spraying produces finishes equal in quality to conventional air-applied finishes.

## Steam Spraying drastically cuts costs and increases production

- Steam spraying *reduces* the volume of material required by reducing overspray.
- Steam spraying *reduces* the amount of solvents and thinners required.
- Steam spraying *increases* the productivity of the operator by a broad margin.
- Steam spraying *reduces* labor costs.

another **BRAKE SHOE EQUIPMENT FIRST**
that is a step forward in painting equipment!




## Spray Booth Maintenance

A 4-page folder, 8½ x 11-in., published by Harco Chemical Co., Cranford, N. J., gives quick facts about three of the firm's ing compound; "Peel-it", a peelable plasproducts. These are "Maskit" booth coattic coating; and "Spra-Kleen" waterwash treatment.

## Heavy-Duty Cleaning Compound

A heavy-duty, alkaline cleaning compound that has been developed for the cleaning of steel prior to vitreous enameling, is described in a folder released by Detrex Corp., Box 501, Detroit 32, Mich.

## Metal Cleaning Book Free

A new 44-page illustrated booklet, which reveals valuable practical information about materials, methods and equipment for cleaning a variety of metal parts and products in preparation for painting, is offered free by Oakite Products, Inc., 32F Thames St., New York 6, N. Y. Please make your request on your company's stationery.

## Cleaning, Finishing and Stripping Aluminum

Inside an aluminum cover printed in blue are 12 pages 4x9-in. which explain in detail several different kinds of cleaning operations for aluminum in preparation for painting.

Specifically covered are such items as hot tank immersion cleaning, metal washing machine cleaning, solvent cleaning, steam cleaning, burnishing, frosting, stripping, cleaning before anodizing and other operations.

Magnuson Products Corp. has compiled a listing on aluminum work which is in keeping with its 27 years of metal cleaning experience. Selection of a proper material is indicated in the booklet which offers more complete assistance through specific information sheets.

A free copy of this valuable booklet can be obtained by writing to Magnuson Products Corp., 50 Court St., Brooklyn 2, New York.

## Maintenance Paints Catalog

A complete line of heavy-duty maintenance paints for industrial, marine and other uses is described in the new Catalog No. 501-HD, issued by Coopers Creek Chemical Corp., West Conshohocken, Pa., manufacturers of C-4 brand coal-tar and asphalt products.

## Cleaning, Phosphating Chart

Where, why and how to use cleaning and phosphate-coating treatments on certain metals and metal products before painting, to produce rust-resistant and improved paint-bonding surfaces is revealed in charts printed on two sides of a folded page 11x16½-in. Free copies can be obtained from American Chemical Paint Co., Ambler, Penna.

## Eleven Ways to Cut Costs Free

"Eleven ways to cut production costs" are graphically portrayed in a pocket-sized primer on industrial lubrication published by the Alemite Division of Stewart-Warner Corp., 1826 Diversey Parkway, Chicago 14, Ill.

In its foreword the booklet (14 pages 5½x8½-in.) declares that lubrication "protects management's largest investment of capital" and that it affects the quality, quantity and cost of all goods produced. The booklet was designed, "to aid maintenance men in bringing to the attention of management suggestions for cost reductions through simplified lubrication methods from barrel-to-bearing."

## Chemist's New Book Free

A 130-page edition of the book entitled "Methyl Ethyl Ketone" has just been published and is now available on letterhead request from Shell Chemical Corporation, 500 Fifth Ave., New York 18, or 100 Bush St., San Francisco 6. Pages are 6x9-in. and many illustrations appear. The book has a handsome stiff cloth binding of dark red and is lettered in gold.

Designed to afford chemists and manufacturers a convenient source of information on methyl ethyl ketone, the book contains a discussion on the commercial applications of this petroleum-derived

**YOUNG BROTHERS OVENS**
**for baking and drying**

**Designed and built to produce the finest results in baking processes such as PAINT FINISHING, METAL DECORATING, INSULATION BAKING. Batch or Conveyor Types for any fuel. Write for Bulletin 3.**

**YOUNG BROTHERS CO.**
1835 Columbus Rd. *Estab. 1896* Cleveland 13, O.

chemical with particular emphasis on surface coatings. Non-surface coating applications, such as adhesives, cleaning compounds, dyes and insecticides are described, as well as the function of methyl ethyl ketone in mineral oil refining and solvent extraction.

A review of chemical reactions and physical properties is presented. The volume includes detailed analytical procedures and a bibliography of more than 500 references.

## Why Falling is so Dangerous

A new safetygraph, showing why falls are one of the most serious of all industrial accident hazards, how they occur and how to prevent them, has been prepared by the National Safety Council, 425 N. Michigan Ave., Chicago 11, Ill.

Designed as a visual aid for training small groups, it consists of 12 spiral-bound pages, 18x24-in., inserted in a leatherette portfolio. When set on a flat surface, it opens to form an easel. On the front pages, facing the audience, are colorful cartoons and duo-tone photographs. A safety talk for the instructor is printed in large easy-to-read type on the back.

This new safetygraph is the latest in a series of 16 published by the Council. One out of every four accidental deaths are caused by falls, the Council points out, and the illustrations show the hazards of ladders, scaffolds, makeshift equipment, slippery or cluttered floors, stairways, unprotected openings and horseplay.

## Research and Development of New and Improved Products

Practical information about the doings of a large concern that makes a specialty of research and development work on materials and products for industry (including finishing materials and equipment) is revealed in a new illustrated booklet (an annual report) containing 24 pages, 8½x11-in., published by The Commonwealth Engineering Co., 1771 Springfield St., Dayton, Ohio.

**TOMORROW'S Products Tested TODAY**

A service to aid industry in producing longer-lasting and better-looking products. Quick predetermination of durability and permanency by actual exposure test in South Florida. Write us today for full information.

**SOUTH FLORIDA TEST SERVICE**
EST. 1931
4201 N. W. 7th St. Miami 34, Fla.

*Write for Catalog of*
**Paint Testing Apparatus**
**GARDNER LABORATORY**
Bethesda 14, Md.

This concern maintains laboratories and shops where research and testing development work on industrial products are carried on. Two of the corporation's several affiliates are New Wrinkle, Inc., licensor of patents and manufacturer of wrinkle finishes, and Chadeloid Corp., licensor of patents and manufacturer of wood stains, varnish removers and opalescent lacquers.

## Metal Protective and Paint Bonding Chemicals

A quick reference list of the American Chemical Paint Co.'s metal protective and paint bonding chemicals and processes (8 pages 8½x11-in.) can be obtained free by writing to American Chemical Paint Co., Ambler, Penna.

In this list you find out about Alodine, Chorodine, Cuprodine, Cuprotek, Duridine, Deoxidine, Granodine, Permodine, Peroline, Rodine, etc., for the respective metals listed. Every metal finisher should have a copy.

**INFRA-RED OVENS**
(Lamped or Lampless)
*Individually engineered in stationary, conveyerized, portable or special designs*
*Manufactured by*
THE MISKELLA *Infra-Red* COMPANY
Main office: 7305 Grand Ave., Cleveland 4, Ohio

FOR ALL FINE FINISHES
**TAC-ALL TACK RAGS**
Packed bulk or individually.
Prices and samples on request.
**GEO. W. RENNER CO.**
2309 Lillie St., Ft. Wayne 5, Ind.

## *Ira Mahaffey, Morgantown, N.C. Joins Schaefer Varnish Co.*

Ira E. Mahaffey of Morganton, N.C., has joined the Sales and Service Department of The Schaefer Varnish Co., 15th & Magnolia, Louisville, Ky., according to an announcement by Thomas F. McGuire, President of the company.

Mr. Mahaffey was formerly foreman finisher at the Drexel Furniture Co., and prior to that connection he was with Davis Cabinet Co., Nashville, Tenn. In his new connection he will be in Schaefer Varnish Co.'s new laboratory at Louisville, Ky., where he will develop new colors and finishes for furniture firms.

## *R. Collins and R. Furrow, Service Engineers for Klem Chemicals*

Two field service engineers have been added to its staff, according to an announcement from Klem Chemicals, Inc., 14401 Lanson Ave., Dearborn, Mich.

Mr. Richard Collins will work out of the company's main office and will service accounts in Detroit and in the Flint and Saginaw section. Mr. Collins is a graduate of the University of Detroit in Chemical Engineering, and has had two years experience with Harshaw Chemical Co.

Mr. Robert Furrow will be Klem's Grand Rapids representative, and will service accounts in western Michigan. Mr. Furrow was formerly associated with the Detroit Ordnance District and the King Seeley Corp.

## *Ferro Enamel Adds I. H. Shroll To Michigan Territory*

The Ferro Enamel Corp., manufacturer of porcelain enamels and equipment, Cleveland, Ohio, announces the addition of Mr. Ivan H. Shroll to its Michigan sales and service staff. Until recently, Mr. Shroll was employed in the Midwest Division of Ferro Enamel in Chicago as a Service Engineer. Mr. Shroll will assist Mr. S. N. Smith, Manager of Michigan territory and will reside at Grand Rapids.

## *Carragher Sells Vedoc Finishes In Western Ohio*

The Liquid Plastics Division of Ferro Enamel Corp., 4150 E. 56th St., Cleveland 5, Ohio, announces the addition of Mr. Philip J. Carragher to its sales staff. Mr. Carragher will handle the sale of the company's product, Vedoc Organic Finishes, in Western Ohio.

Mr. Carragher attended Akron (Ohio) University, and has had extensive experience with several large companies. During the years 1941 through 1947 he was with the United States Army, serving in the Southwest Pacific battle zone. He was discharged with the rank of Captain.

Want to see what Electro-Spray can do for your products? . . . Every day you hear of another manufacturer—office equipment, toys, household appliances, automotive parts—who switched to electrostatic spray and is enjoying big savings in paint and labor.

Ransburg maintains a laboratory with five self-contained, conveyorized spray booths for demonstrating Electro-Spray on all types of products.

Here, with no obligation, you can see *proof* of the savings possibilities of Electro-Spray as applied to *your* product . . . see how *uniformly,* how efficiently the *automatic* Ransburg Process *collects* the paint on the work.

For a *free* demonstration of how Electro-Spray can save 40 to 60% on *paint, labor,* and *spray booth maintenance,* write today for further information to

**Ransburg Electro-Coating Corp., Indianapolis 7, Ind.**

RANSBURG *Electrostatic Painting Processes*

## Formica Finish on Wood

**By C. O'Leary**

I WAS CALLED upon once to put a formica finish on wood. Here is how I did it: First, I obtained a sample of the formica color. It was an off-white. I finished the wood with lacquer—lacquer sealer plus one or two coats of white lacquer enamel. Then I thinned a very light gray synthetic with turpentine and sprayed on a light coat. To get the formica finish I crumpled a sheet of newspaper and tapped it lightly over the synthetic until I had the same effects as the formica sample.

This finish can be duplicated in any colors. First obtain samples of formica in different colors, and then mix or prepare colors to match. It may call for some skilled hand work to match the design. When the base color and top color design have been put on, and when these coatings are thoroughly dry, I spray on a double coat of clear lacquer, let dry, and then rub with compound to a high glass-like finish.

## Glidden's S. S. Award Won by S. C. Cathcart

Awards for outstanding sales achievements in the two major divisions of the Glidden Company were announced recently by Dwight P. Joyce, president of the company.

The Senior Salesman's award of $1000 was won by S. C. Cathcart, a veteran industrial paint salesman in the Cincinnati territory.

Prizes are based on all-around sales accomplishment, as well as on the actual volume of sales. Winners are picked by five company executives including Mr. Joyce.

The senior award winner, Mr. Cathcart, has served Glidden since 1933 and has been an outstanding salesman for many years. During 1949 he increased his sales volume by more than $100,000.

## Aviquipo, Foreign Distributor of Glidden Aircraft Finishes

Appointment of Aviquipo, Inc., as distributor of The Glidden Company's aircraft finishes in all countries of the world except the United States, its territories and possessions, Cuba, Mexico and Canada, is announced by A. D. Duncan, vice president in charge of the Glidden Company's Paint & Varnish Division.

The aircraft finishes, known as "Glidair," will be distributed through Aviquipo subsidiaries in England, France, Portugal, India, South Africa, Australia, Thailand and six countries in South America.


## Classified Advertising

**Rate: $1.00 per line per insertion—minimum $5.00**

**INDUSTRIAL FINISHES SALESMAN WANTED.**

Complete line of lacquers, synthetics and wrinkles. Established New Jersey 25 years. Excellent opportunity if you can qualify. Our men know of this ad. Address IF-741, care Industrial Finishing.

**SALESMAN WANTED FOR INDIANA.**

Well established Chicago firm desires a man residing in Indiana, with knowledge of furniture finishing methods. Previous experience on radio cabinets and furniture will be given special consideration. Applications will be treated confidentially. Address IF-727, care Industrial Finishing.

**Wanted: Chemist Experienced**

**In formulating industrial finishes, preferably both synthetic and lacquer and for both metal and wood surfaces. Executive ability at least to some degree is important. We are an old established, growing southern company located in the Tennessee Valley Authority area. We have complete laboratory and manufacturing facilities and do a sizeable business. The present and future of our organization are such that this position offers a good opportunity. Please give complete information as to age, education, experience, salary, etc. Replies will be held in strict confidence. Address IF-740, care Industrial Finishing, Indianapolis 4, Ind.**

### SALESMAN WANTED.

Experienced Paint Spray Equipment salesman. Good salary plus commission. Address IF-712, care Industrial Finishing.

### SALESMAN WANTED.

Salesman for lacquers and enamels by national manufacturer for Philadelphia territory. Address IF-737, care Industrial Finishing.

### FINISHES TO ORDER!

Small Indiana Paint Manufacturer, both architectural and industrial, will manufacture products on either your or our formula on cost plus basis. This means extra commissions for a salesman with a following or a savings to anyone buying finishes in quantity. Our employees know of this advertisement. Address IF-730, care Industrial Finishing.

### SPECIAL FINISHES

**Your Formulae or Ours**

Established manufacturer of quality paints, lacquers, thinners, synthetics and industrial finishes will make up special finishes to order. Money saving plan for quantity buyers. Complete laboratory and production facilities. Address IF-742, care Industrial Finishing.

### WANTED TO BUY.

Will Buy your dirty Thinners and Solvents. Send sample or letter giving approximate contents and solids. Address THE JOHANN CO., 633 E. 138th St., Dolton, Ill.

### WANTED.

Good used paint agitator, to handle from pint to gallon can inclusive, either Red Devil or Miracle make. Give complete information as to make, condition and size of the agitator, mixer or shaker, price, etc. Address HAROLD H. FREE & CO., Inc., 1108 Union Ave., Memphis 3, Tenn.

### PRIMER FOR SALE.

Red Oxide—Sherwin-Williams and Du Pont—Bake or Air Dry—Best Quality—$1.10 per gal. drums, $1.25 in 5's. Check with order please. HOGAN PAINT & CHEMICAL CORP., Edgemere, L.I., N.Y.

### FOR SALE.

51-inch Roller Coater including motor, $450.00. EXCELLO SPECIALTY CO., 4103 East 100th St., Cleveland 5, Ohio.

## FORD CUPS

**THE VOL-U-METER COMPANY**

**Buffalo 16, New York**

### FOR SALE.

Paasche Automatic Spray Machine, 160 feet of chain with 1280 spindles on 1½-in. centers. 1½-H.P. drive with adjustable speed attachment. Conveyor mounted on steel frame 10 x 20-ft. Two speed reduction units, two intermittent table motion units, two water wash booths, one dry booth, two 1/3-H.P. drive for turning spindles in booth, one water pump with 3-H.P. motor, one exhaust fan for dry booth, ½-H.P. motor, one 1½-H.P. motor for connected exhaust in two wet booths. All motors explosion proof. One new insulated baking and drying unit, enclosed Chromalox units, three heat exchangers, nine air conditioning units, 15 air regulators, one 15-H.P. Ingersoll-Rand air compressor with compensator. 15 spray guns. Tanks: Three 60-gal., two 30-gal., one 15-gal.

Will sell as a complete unit or part. STERLING BATTERY COMPANY, INC. 3823 East Tremont Avenue, New York 61, N.Y.

### FORCED SALE

BECAUSE OF DEATH OF PRINCIPAL OPERATOR AND MANAGER AND RESULTANT CURTAILMENT OF OPERATIONS, WE OFFER FOR SALE THE FOLLOWING EQUIPMENT — ALL IMMEDIATELY AVAILABLE:

1 Infrared Sectional Drying System, consisting of one 128-light portable end section, one 160-light portable end section, two 330-light side sections, complete with switches, wiring, fittings and supports.

1 Wet Face Baffle Spray Booth—20' wide x 9' high No. 18 gauge steel 3 section water tank fan type water wash system—baffle plates. Six sprinkler heads including galvanized iron pipe connection and supports. 1 New York Blower Company, size 44, type ME steel plate exhaust fan No. 6199—620 RPM—ball bearing—22500 CFM 44" x 36" horizontal top exhaust—36" side intake with V belt.

1 General Electric 10 HP induction motor No. By12454, type K frame 324—Code G, 3 Ph. 60 cy. 440 V 1450 RPM—40° Centigrade rise—with base, Allan Bradly bull, No. 709 size 2 magnetic start—push button switch—Trumbull type A No. 36362. Starter switch including wiring.

IN ORDER TO LIQUIDATE ESTATE. NO REASONABLE OFFER WILL BE REFUSED. CONTACT: Chicago Streamlite Corporation, 4651 Cottage Grove Avenue, Chicago, Illinois.

# INDEX to Advertisers


Advance Paint Co. ..... Front Cover
Allied Finishing Specialties Co. ..... 12
American Brake Shoe Co. ..... 120-121
American Richwood Products Co. ..... 119
Atlas Powder Co. ..... 53

Balsa, Inc. ..... 87
Barrett Co., Leon J. ..... 9
Bauer & Black ..... 39
Baughn Chemical Products Co. ..... 101
Bede Products, Inc. ..... 93
Behlen & Bro., Inc. ..... 81
Better Fnishes & Coatings, Inc. ..... 116
Binks Mfg. Co. ..... 54-55
Brown Co., Andrew ..... 56

Capitol Machine Co., The ..... 17
Carborundum Co. ..... Third Cover
Chemco Products Co., Inc. ..... 9
Claremont Waste Mfg. Co. ..... 59
Classified Advertising ..... 126
Clinton Co., The ..... 117
Cover, H. S. ..... 103

Day & Co., James B. ..... 85
DeBurgh Conveyors ..... 96
Detroit Surfacing Machine Co. ..... 99
Dolan & Co., Inc., V. J. ..... 5
Du Pont de Nemours & Co., E. I. ..... 64-65
Duralac Chemical Corp. ..... 8

Enthone, Inc. ..... 1

Gardner Laboratory ..... 123
Gasway Corp. ..... 41
Gates Engineering Co. ..... 105
Grand Rapids Varnish Corp. ..... 2

Harding Mfg. Co. ..... 81
Hercules Powder Co. ..... 111

Industrial Chemical Co. ..... 75
Industrial Chemical Development Corp. ..... 107
Interchemical Corp. ..... Second Cover

Kirk & Blum Mfg. Co. ..... Back Cover
Kirker Chemical Co. ..... 16
Klem Chemicals, Inc. ..... 27
Koch Sons, Inc., George ..... 77

Lanly Co., The ..... 118
Lawrence-McFadden Co. ..... 103
Lenoir Wood Finishing Co. ..... 75
Lilly Varnish Co. ..... 6-7

Mahon Co., The R. C. ..... 10-11
Mearl Corp., The ..... 63
Miracle Paint Rejuvenator Co. ..... 119
Miskella Infra-Red Co. ..... 124
Monsanto Chemical Co. ..... 49

National Air Sander, Inc. ..... 47
National Lacquer & Paint Co. ..... 100
Neilson Chemical Co. ..... 23
New York Woodfinishers Supply Co. ..... 66

Oakite Products, Inc. ..... 21

Perfection Paint & Color Co. ..... 83
Pittsburgh Plate Glass Co. ..... 78-79
Pratt & Lambert-Inc. ..... 89
Protective Treatments, Inc. ..... 61

Qualatone Products, Inc. ..... 71

Randolph Products Co. ..... 37
Ransburg Electro-Coating Corp. ..... 125
Rayon Processing Co. of R. I. ..... 91
Reliance Varnish Co. ..... 69
Renner Co., George ..... 124
Rockford Varnish Co. ..... 97
Ronci Machine Co. ..... 109

Schaefer Varnish Co. ..... 73
Shell Chemical Corp. ..... 15
Snyder Bros. Co. ..... 118
South Florida Test Service ..... 123
Spruance Co., The Gilbert ..... 13
Stanley Chemical Co. ..... 113
Stille-Young Corp., The ..... 112
Sunstrand Machine Tool Co. ..... 95

Tousey Varnish Co. ..... 115

United Finish Co. ..... 112
United Lacquer Mfg. Corp. ..... 35

Varnish Products Co. ..... 101
Vol-U-Meter Co. ..... 107-127

Watson-Standard Co. ..... 14

Yarnall Paint Co. ..... 45
Young Bros. Co. ..... 123

COATED PRODUCTS COMMENTS

# Now, a better way to finish intricate surfaces

The Brush-Backed Polishing Head has proved to be particularly effective in generating uniform final and pre-buff finishes on irregularly shaped metal surfaces. It saves time, cuts costs and produces a better finish. Operation is safer, cleaner and easier. Less handling time is required. As a result, this long time favorite of the woodworking trade is being widely adopted for metal working applications.

The use of the Vonnegut Brush-Backed Polishing Head on metal applications is a joint development of The Carborundum Company and the Vonnegut Moulder Corporation. It employs an outer frame for holding bristle brushes and an inner spool for coated abrasive strips. The yielding action of the brushes automatically forces the abrasive to follow irregular contours of the work. It may be used on hand, semi-automatic or automatic operations. Detailed information will be supplied on request. Coated Products Division, The Carborundum Company, Niagara Falls, New York.

**COATED ABRASIVES BY**

# CARBORUNDUM

TRADE MARK

**Making ALL abrasive products...**
**to give you the proper ONE**

*"Carborundum" is a registered trademark which indicates manufacture by The Carborundum Company*

# In the modern NUTONE plant

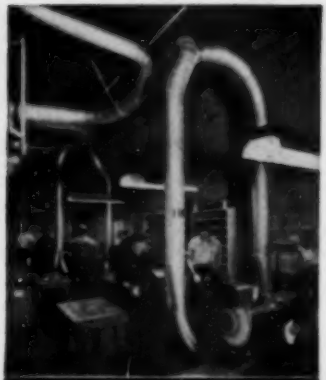
## ...6 DIFFERENT INSTALLATIONS By KIRK AND BLUM!

- 2 DUST CONTROL SYSTEMS
- DEGREASING AND ACID ETCHING VENTILATION
- PAINT SPRAY BOOTHS (INSTALLED ONLY)
- PAINT DRYING OVEN AND CONVEYOR
- MAKE-UP AIR SUPPLY SYSTEM

A variety of problems in the Finishing Departments of NuTone Incorporated, were solved by KIRK & BLUM Engineers. Shown here are the various installations which were designed, fabricated and installed by KIRK & BLUM.

Of special importance is the "Make-up" Air Supply System which filters, heats and replaces air exhausted by the other systems, eliminating undesirable winter drafts.

The wide experience of the KIRK & BLUM organization is at your service. "Clean Air . . . the Invisible Tool" can do much to increase the efficiency of your operations. For more details and literature, write The Kirk & Blum Mfg. Co., 2831 Spring Grove Ave., Cincinnati 25, Ohio.



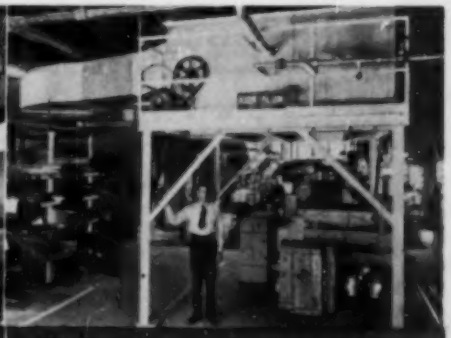
Two KIRK & BLUM Dust Control Systems serve the polishing and buffing room.

FOR CLEAN AIR . . . THE INVISIBLE TOOL

**KIRK and BLUM**

DUST AND FUME CONTROL SYSTEMS
INDUSTRIAL OVENS

Overhead conveyorized Paint Drying Oven installed complete by KIRK & BLUM.



"Make-up" air supply system replaces air exhausted from plant.